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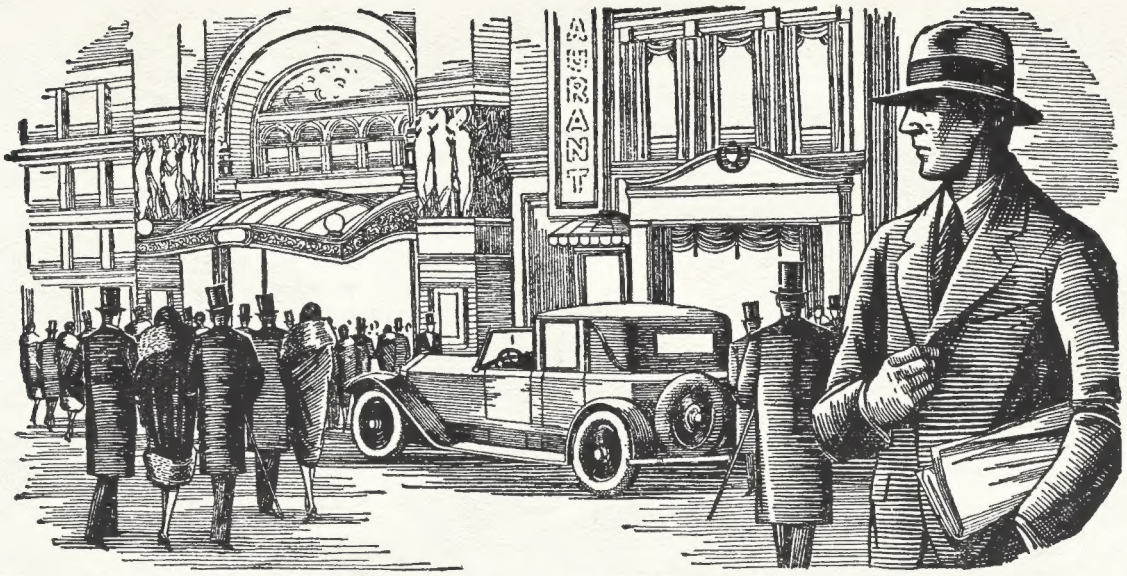

Always outside of things —that's where I was just twelve short months ago. I just didn't have the cash, that was all. No theatres, no parties, no good restaurants. No real enjoyment of life. I was just getting by, just existing. What a difference today! I drive my own car, have a good bank account, enjoy all the amusements I please.

I Couldn't Get the Good Things of Life

Then I Quit My Job and "Found" Myself!

HOW does a man go about making more money? If I asked myself that question once, I asked it a hundred times!

I know the answer now—you bet. I know the way good money is made, and I'm making it. Gone forever are the days of cheap shoes, cheap clothes, walking home to save carfare, pinching pennies to make my salary last from one pay-day to the next one. I own one of the finest Radio stores you ever saw, and I get almost all the Radio service and repair work in town. The other Radio dealers send their hard jobs to me, so you can see how I stand in my line.

But—it's just a year ago that I was a poorly paid clerk. I was struggling along on a starvation salary until by accident my eyes were opened and I saw just what was the matter with me. Here's the story of just how it happened.

One of the big moments of my life had come. I had just popped the fatal question, and Louise said, "Yes!"

Louise wanted to go in and tell her father about it right away, so we did. He sort of grunted when we told him the news, and asked Louise to leave us alone. And, my heart began to sink as I looked at his face.

"So you and Louise have decided to get married," he said to me when we were alone. "Well, Bill, just listen to me. I've watched you often here at the house with Louise and I think you are a pretty good, upstanding young fellow. I knew your father and mother, and you've always had a good reputation here, too. But let me ask you just one question—how much do you make?"

"Twenty-eight a week," I told him.

He didn't say a word—just wrote it down on a piece of paper.

"Have you any prospects of a better job or a good raise some time soon?" he asked.

"No, sir; I can't honestly say that I have," I admitted. "I'm looking for something better all the time, though."

"Looking, eh? How do you go about it?"

Well, that question stopped me.

How did I? I was willing to take a better job if I saw the chance all right, but I certainly had laid no plans to make such a job for myself. When he saw my confusion he grunted. "I thought so," he said. Then he held up some figures he'd been scribbling at.

"I've just been figuring out your family budget, Bill, for a salary of twenty-eight a week. I've figured it several ways, so you can take your pick of the one you like best. Here's Budget No. 1: I figure you can afford a very small unfurnished apartment, make your payments on enough plain, inexpensive furniture to fix such an apartment up, pay your electricity, gas and water bills, buy just about one modest outfit of clothes for both of you once each year, and save three dollars a week for sickness, insurance, and emergencies. But you can't eat. And you'll have to go without amusements until you can get a good, substantial raise in salary."

I began to turn red as fire.

"That budget isn't so good after all," he said, glancing at me; "maybe Budget No. 2 will sound better——"

"That's enough, Mr. Sullivan," I said. "Have a heart. I can see things pretty clearly now; things I was kidding myself about before. Let me go home and think this over." And home I went, my mind in a whirl.

At home I turned the problem over and over in my mind. I'd popped the question at Louise on impulse without thinking it out. Everything Mr. Sullivan had said was gospel truth. I couldn't see anything to do, any way to turn. But I had to have more money.

I began to thumb the pages of a magazine which lay on the table beside me. Suddenly an advertisement seemed almost to leap out at my eyes, an advertisement telling of big opportunities for trained men to succeed in the great new Radio field. With the advertisement was a coupon offering a big free book full of information. I sent the coupon in, and in a few days received a handsome 64-page book, printed in two colors, telling all about the opportunities in the Radio field and how a man can prepare quickly and easily at home to take advantage of these opportunities. I read the book carefully, and when I finished it I made my decision.

What's happened in the twelve months since that day seems almost like a dream to me now. For ten of those twelve months I've had a Radio business of my own! At first, of course, I started it as a little proposition on the side, under the guidance of the National Radio Institute, the institution that gave me my Radio training. It wasn't long before I was getting so much to do in the Radio line that I quit my measly little clerical job and devoted my full time to my Radio business.

Since that time I've gone right on up, always under the watchful guidance of my friends at the National Radio Institute. They would have given me just as much help, too, if I had wanted to follow some other line of Radio besides building my own retail business, such as broadcasting, manufacturing, experimenting, sea operating, or any one of the score of lines they prepare you for. And to think that until that day I sent for their eye-opening book, I'd been wailing, "I never had a chance!"

Now I'm making real money. Louise and I have been married six months, and there wasn't any kidding about budgets by Mr. Sullivan when we stepped off, either. I'll bet that today I make more money than the old boy himself.

Here's a real tip. You may not be as bad off as I was. But, think it over—are you satisfied? Are you making enough money, at work that you like? Would you sign a contract to stay where you are now for the next ten years, making the same money? If not, you'd better be doing something about it instead of drifting.

This new Radio game is a live-wire field of golden rewards. The work, in any of the 20 different lines of Radio, is fascinating, absorbing, well paid. The National Radio Institute—oldest and largest Radio home-study school in the world—will train you inexpensively in your own home to know Radio from A to Z and to increase your earnings in the Radio field.

Take another tip—no matter what your plans are, no matter how much or how little you know about Radio—clip the coupon below and look their free book over. It is filled with interesting facts, figures, and photos, and the information it will give you is worth a few minutes of anybody's time. You will place yourself under no obligation—the book is free and is gladly sent to anyone who wants to know about Radio. Just address J. E. Smith, President, National Radio Institute. Dept. 1-DS, Washington, D. C.

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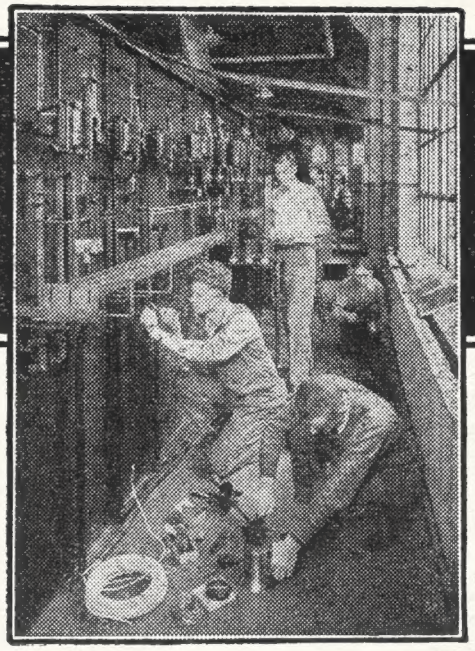

LEARN Without

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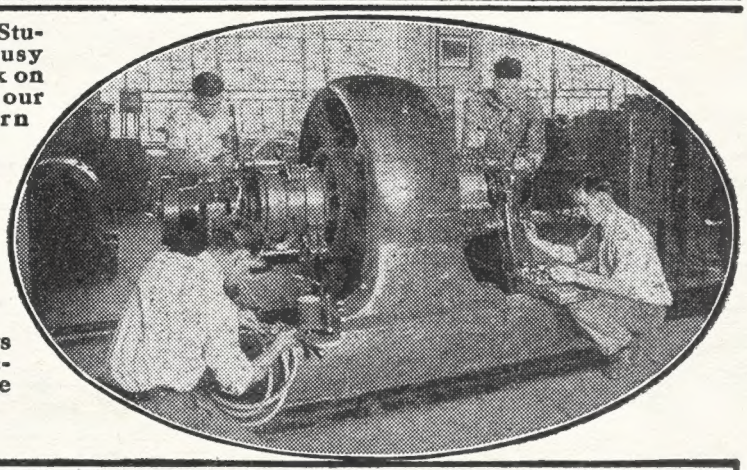
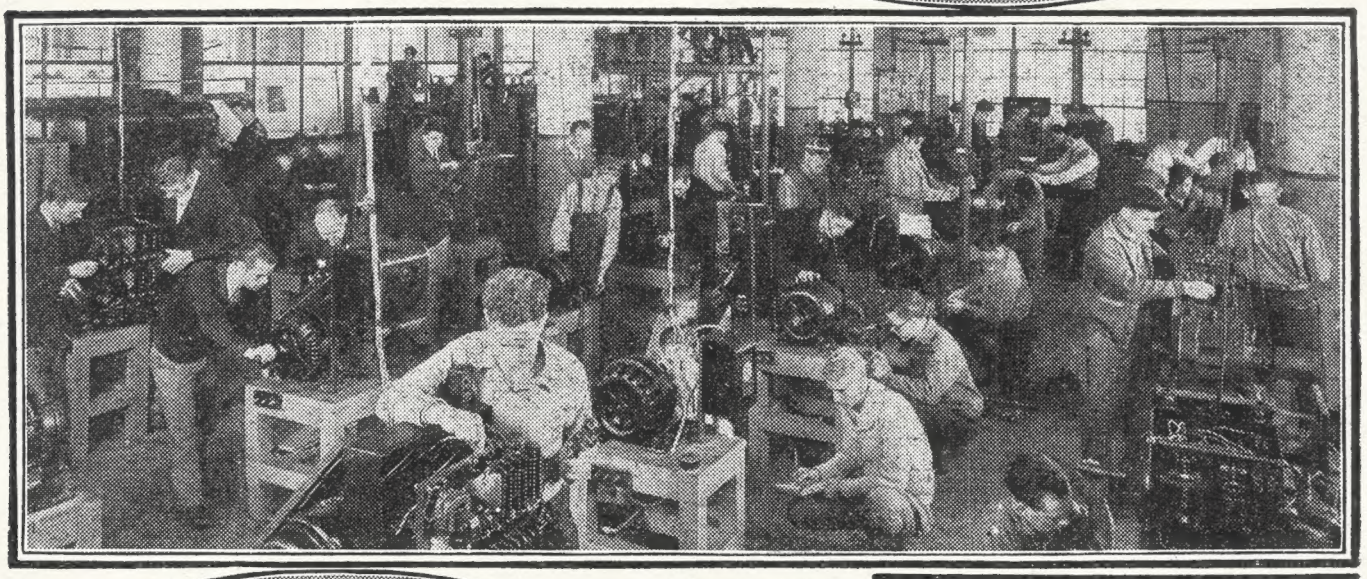
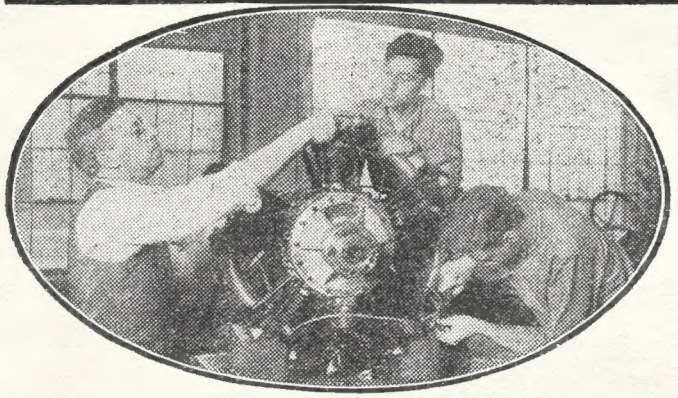


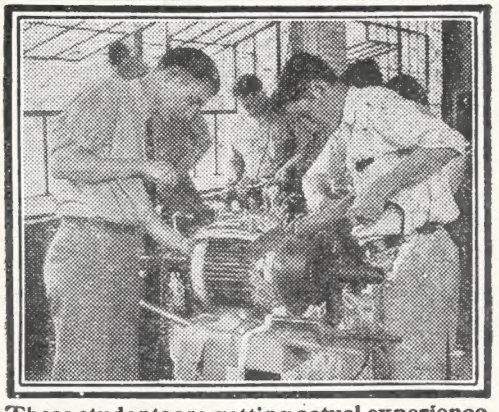
The photo to the right shows several students getting actual experience on a large synchronous converter.





Here you see an Instructor explaining the operation of a modern airplane engine.

A general view of our great Alternating Current Department. These fellows are learning by actual, practical work.



These students are getting actual experience in armature winding and repair.

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AMAZING STORIES

Scientific Fiction

Vol. 6 **April, 1931** **No. 1**

In Our Next Issue

BEINGS OF THE BOUNDLESS BLUE, by Walter Kateley. Here is a highly imaginative piece of fiction in which our well-known writer ingeniously makes use of the comparatively recently discovered facts about the compound nature of the atom and the still mysterious Heavyside layer, which no human being, to our knowledge, has ever penetrated. But will he never go beyond this layer? And if so, how? Mr. Kateley has some very interesting ideas on this subject.

THE CEREBRAL LIBRARY, by David H. Keller, M.D. President Eliot has nothing on Dr. Keller. Even after having read all on the five-foot bookshelf, the reader has only a superficial knowledge of the various topics that might be discussed at a formal dinner. But Dr. Keller's idea, well. . . .! But we have no hankering for being part of the scheme.

THE GREAT CATASTROPHE OF 2947, by Woods Peters. On the island of Hawaii is the largest active volcano in the world. But aside from our interest in its volcanic propensities, there might be others—as witness the conjurations brought to life by the vivid imagination of this capable writer, who is not entirely a stranger to our readers.

THE RADIO DETECTIVE, by Lincoln S. Colby. Fortunately, even the detective's life has no chance of becoming cut and dried in these days of astounding discoveries and inventions. Or, perhaps the detectives don't agree with us as to things being so fortunate. For it may become increasingly difficult for 'just good' detectives to solve a problem. He'll have to study his radio and science.

ACROSS THE VOID, by Leslie F. Stone. (A Serial in Three Parts) Part II. What happens to the old Uncle on the planet Venus is only a mere incidental to what happens on a distant star which our strange people visit in this second instalment.

And other scientific fiction.

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Our Cover

this month illustrates a scene from the story entitled, "The Menace from Andromeda," by Nat Schachner & Arthur L. Zagat, in which the jelly-like substance, apparently endowed with intelligence, is wreaking destruction on whatever crosses its path on the high seas.

Cover Illustration by MOREY

Published Monthly by **Radio-Science Publications, Inc.,** *Jamaica, N. Y.*

EDITORIAL AND EXECUTIVE OFFICES
381 FOURTH AVENUE, NEW YORK CITY, N. Y.

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VOLUME 6

AMAZING STORIES

THE MAGAZINE OF SCIENTIFICTION

APRIL, 1931 No. 1

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Editorial and General Offices: 381 Fourth Avenue, New York, N. Y.

Extravagant Fiction Today - - - - - - - - - - Cold Fact Tomorrow

Errors in Science

By T. O'Conor Sloane, Ph.D.

YEARS ago, it was, the writer of these lines produced a book which dealt with the subject of physics. There is one doctrine in the science, which under ordinary conditions, such as we live under, holds sway. It is the law of the conservation of energy. If you lift a weight to the height of a foot, and release it, so that it can fall back to its original plane, it will exert the same amount of energy in its descent as you exerted in lifting it. Your action created no energy. It may be put in the sense that you converted vital energy into potential energy. If it was a pound weight, the energy involved was a foot-pound. You can neither create nor annihilate energy.

Force is far different, there is no conservation about it. It exists as long as it is exercised, and then goes out of existence when the exercising of it ceases.

The text of the book in question went on to say that there is no such thing of doctrine as that of the conservation of force. This is absolutely true. But one of the reviewers of the book asserted that the author of the same said that there was no law or doctrine of the conservation of energy. Apparently this reviewer did not grasp the simple fact that force is one thing and energy another.

This failure of comprehension of an essential difference led to the publication of a curious little book, about the middle of the last century. It was on the subject of the conservation of force. There was something seductive about the error. The book was made up of quotations of celebrated authorities on the subject, which for some time evidently had excited much discussion. The opinions of the various authorities were decidedly of the hazy order. Faraday was one of those cited. The problem had been submitted to him, and it was interesting to see how he could not reconcile it in his mind, yet was not willing to assign it to its true position as a falsity, pure and simple.

This error in classical physics, as the science is now sometimes picturesquely termed, is comparable to one of the older ones. For centuries it had been held that a heavy body would fall faster than a light one. It was Gallileo in Pisa who disproved it, by dropping objects of different weights from the leaning tower. But why had it never occurred to anyone before to try the simple experiment?

Another curious error was immortalized by Otto van Guericke with his famous hemispheres. He shows them in his book between two teams of horses, one team pulling against the other in tug-of-war fashion. It is quite impressive, but the pull to separate them would have been the same with a single team of horses, if one of the hemispheres had been fastened to a post, and if the two teams had pulled against the post, he would have had double the pull on his hemispheres. But this fact seems to have been beyond his conception.

Recently, in one of the editorials in this magazine, the curious phlogiston doctrine, held for many years as one of the fundamental laws of chemistry, was alluded to. It kept science in abeyance, and prevented its theory being formulated, until Lavoisier and Priestly proved that a pound added to a pound gave two pounds just as truly in chemistry as in anything else.

It is pretty certain that no one now accepts the Epicurian chaos, minute particles of matter going about through space and eventually joining and thus starting the work of creating all that we know of matter, solid, liquid and gaseous. This idea antedates chemistry, for two thousand years ago wood was wood in the belief of all, and not the compound of carbon, hydrogen, oxygen and some other elements as we now consider it to be. This lack of knowledge applied to all compound substances.

Edgar A. Poe says that if we knew everything and had nothing to find out and discover, if there was nothing left for us to exercise our intellects upon, we would be very unhappy. But in spite of what Jeans, Millikan, Eddington and Einstein are doing, we are not in any danger of the unhappiness announced by Poe.

Changing of theories, abandonment of long accepted views are not to be treated as mere errors. We do not know today how near the truth some of our theories are. The old-time system of scientific obstinacy, characteristic of Victorian science, has pretty well disappeared, and the best men are open to modification of their scientific beliefs. A good instance of this was the sudden acceptance of the Einstein theories. It is they that are at the root of a sort of division of science, especially physical and cosmical. To the old working basis is assigned the title of classic physics. In all this connection it is interesting to see how a sort of flexibility, appears in enunciation of theories by the greatest of scientists, and how willing they are to let others believe different from themsleves. It was far different in old times.

Across *the* Void

A Sequel to "Out of the Void"

By Leslie F. Stone

THE old-time evolutionists claimed that through sheer influence of surroundings and conditions of existence man has evolved to what he is. What might have happened under absolutely different atmospheric influences remains to us eminently problematical—particularly conditions that might be prevalent outside our own galaxy, in worlds of which even our most powerful telescopes fail to give us an inkling. But it seems increasingly absurd to hold to the opinion that there can be no intelligent life except on the Earth. Leslie F. Stone has finally answered the insistent call for a sequel to "Out of the Void" with this new serial, which, incidentally, is complete in itself. In our opinion, "Across the Void" easily surpasses the original.

Do not miss the first instalment in this issue.

Part I

TWENTY-FIVE YEARS AFTER

CHAPTER I

An Old Friend

WHEN Janson ushered the three visitors into his study, Walter Kington looked up in peevish anger. "Drat the man! Would the fellow never learn that he was not to bring callers when his master was ensconced behind the desk in the room that bespoke 'Private'? He must assuredly be sent on his way!" Yet Kington was not going to discharge Janson from his service, for at the sight of the tall, well-proportioned, bronze-haired man who had entered the room, Kington forgot the present to recall the past, the past in which Richard Dorr had figured so largely!

Thirty years ago, Wally Kington (he was Wally then) had averred he would always know Dick Dorr anywhere, anytime, no matter how the years might change them both. Today was proof of his given word, for immediately he had recognized his one-time chum in the browned, lined face before him.

It had not been Wally's fault that his sister, Terry, had played rather loosely with his handsome chum, that because of the incident Dorr had left England for an African gold mine, but Wally had never forgiven himself for having allowed Dorr to meet Terry—Terry, who liked men only to demonstrate her own power over them, to toss them aside with that cold inhuman laugh of hers after they had given her their love. Wally did know that it had been Terry's greatest mistake when she laughed at Dorr, for thereafter she had never been the same, had never so much as looked at another man and four years later had gotten herself killed in an idiotic dash for America by airplane.

As a flood this all came back to Kington, as for the first time in thirty years he looked into Dorr's familiar face; then he was on his feet pumping the other's hand. "Gad, Dick, it's good to see you, old man," he was crying. "When did you arrive in London and why the devil haven't you let me hear from you all these years. It's twenty-six years since I received your last letter! Why, man alive, you knock me off my feet. And you've not changed much either! Look at me . . . not much of the Wally of old days, eh?"

Dorr was smiling warmly down upon the little man from his own six foot height, but his demonstration was

Almost sadly we watched the meeting of the two—the handsome silver man of Abrui and the monster of Venus. They came to a halt . . . but to my wonder, nothing happened.

Illustrated by
WESSO

less enthusiastic than the other's. The years had not aged him greatly, though they had put a feathery tracing of gray at his temples, and impressed lines on his face that only added to its power, leaving him this serious eyed man. Kington could remember that Dorr had always been a serious fellow—too serious, else the Terry affair would never have sent him off to Africa to forget his hurt. He was a reticent chap, too; never effusive. Wally, on the other hand, had always been the jolly-well-met fellow, open with his likes and dislikes. And only because he had become the personage that he was, eminent scientist and all that . . . had he perforce been made to shut up like a clam to the goggling world. Yet to his friends he was still the Wally of old, bubbling with good fellowship and friendliness. But the years had sat on him more heavily, made his short body round and his head bald. Well, everyone wasn't lucky enough to keep both their figure and hair as Dick Dorr had.

Dorr was answering Kington's questions slowly, almost wearily. "I haven't been in London, Wally, in all these years because I have been farther away than you would dare believe, and as for my letting you or anyone know—well that was just about an impossibility. But wait, let me present my companions."

During the few moments consumed by the greeting, Kington had failed to note the two who had followed Dorr into his chamber, but now, for the first time, his eyes sought out the woman and the youth framed in the doorway. He saw a slender woman, gray-haired and with the ravages of the years on her sweet, calm face that could never have been very beautiful; but wholesome and gentle-eyed, it still was. Her eyes, however, were strangely arresting, not because of the life in them, but because of the faded look of a light that had died within them. She was clothed in what appeared to be a home-made dress and hat, and even the eminent recluse that he was, Kington was quick to note that her garments were antiquated by at least two decades despite the fact that they seemed newly made. Later, he was to see that both Dorr and the youth were dressed in much the same old-fashioned way—in ill-fitting, poorly tailored clothing. Now he was trying to learn what was so strange about the young fellow who stood a little to the left and behind the woman.

In the first place he was overtall—surely all of six feet six inches or more—with a large powerful body that still had something of the immaturity of youth in it. Then he was wearing large ungainly spectacles that hid his eyes, and on his head was an enveloping cap that covered hair and forehead and which he had not removed on entering the house. Yet there was enough of his face showing to tell that it was a handsome one with regular features, almost unearthly in contour, delicate and esthetically at variance with the power of his big adolescent body. And even in the lamp light that lighted the windowless room, Kington noticed a strange quality of his complexion, a queer silvery tint that seemed to underlie the skin, but that shone forth as color shines under the weave of an irridescent length of cloth. The scientist thought he had never seen an odder looking young man.

"This is Elsie Rollins-weiti and her son, Ezra-weit," said Dorr by way of introduction that did little to explain the ill-assorted pair, in whom a slight family resemblance might be seen on second glance, but Dorr, evidently wishing to lose little time in either introductions or explanations, gathered his one-time friend's attention to himself for the second time.

CHAPTER II

Startling News

"THE tale I have to relate you, Wally, is a strange one," he began, "but after you hear our needs you will not be surprised that I've come to you first, aside from our relations of the past. We need someone whose word carries weight on this globe, and I know you will do all that you can to help us when I show you what benefits the earth is to derive from the connection I have to offer her!"

Kington did not answer immediately. The odd speech affected him strangely. In the first place he had not yet gotten over the surprise of seeing Dorr again, then there were these strangers, Dick's queer attitude and appearance, and now his queerer talk.

"Why, Dick," he said, "I don't know what you are driving at. Why, man . . . you speak as though you were from another world . . . as if . . ."

"Right! I am from another world, Wally . . . that is what I wish to tell you about," interrupted Dick.

Had Kington's colleagues seen the man at that instant, they would have been astounded. Kington, the unapproachable, the unemotional, the staid, sauve scientist, who dominated all gatherings, the man who never showed surprise at the latest scientific developments, the man who could ruffle an Einstein! Kington stood there, looking like a school lad who had just heard for the first time that the world was round! And he was actually stammering!

"My God . . . Dick . . . w-what are you—telling m-me? You—you are—but of course you are sane? You've changed—you've—why . . . ?"

"Of course I am sane—and I am telling you the truth. Come—come, Wally, brace up. My statements shouldn't shock you in this day and age. Why, I've learned that you now travel this globe of ours at the rate of 3200 kilometres per hour! Isn't the next step for you to take into Space?"

Kington had to swallow something before he found his voice. "You mean that you've crossed Space?"

"Yes, and if we can arrive at terms with the earth, you will be crossing it yourself!" shot the other.

Kington's eyes stared from his head. "You mean it, Dick?" He took his handkerchief from his pocket to mop his brow. "You've struck me all in a heap, Dick—it's—well—it's a shock, you know."

Dorr smiled. "Sorry, old chap, that I startled you, but you see I've lived with the thought for the past twenty-five years now, and I can't realize that others still can't grasp it easily."

"Well, come, sit down—all of you—and tell me about it. I guess there's a long story."

The three arranged themselves to their host's liking. Then Janson was asked to bring brandy for the men and wine for the woman. Ezra-weit accepted his glass and sniffed of it before he drank it down, then there was such a coughing and sputtering as never had been heard before over a glass of brandy. Janson had water for the youth who took it gratefully. He had to remove his dark glasses that had become misted, and an exclamation of shocked surprise escaped Kington when he saw what the spectacles had hidden. Ezra-weit had lavender eyes!

Dorr had been chuckling over the scene. "It's Ezra's first try at 'hard liquor.' We should have warned him."

"Tell him to take his cap off," whispered Kington *sotto voce*.

Dorr looked up in surprise, then he grinned, and said something to the youth in a strange tongue. The boy complied and exposed a head covered with a thick mop of hair that was as silvery as the small vase standing on Kington's broad desk. At a glance it could be seen that the hair had never had other pigmentation, that it was silver as Kington's scrap of hair was black, and Dorr's reddish bronze.

"He comes of this planet you're speaking of?" queried Kington, his eyes on the strange features. "Mars?"

"Not Mars, but Abrui, as it is called by its inhabitants, a planet which has its orbit outside of Neptune!"

Kington started at that, and scanned Dorr's face closely. "Gad! that hardly sounds credible, Dick. But what a find! Why that is enough to make your name resound to the heavens themselves. Yet let me think —ah, yes, there have been astronomers who believed in the fact that there are trans-Neptunian planets. Wasn't it Forbes of Edinburgh, back in about 1880 who inferred from the study of the orbits of comets whose aphelia are beyond Neptune that there are two remote members of the solar system revolving at the distances of 100 and 300 astronomical units in periods of 1000 to 5000 years?"

"Sorry," observed Dorr, "I am no astronomer, but the fact remains that Abrui lies just about 49 astronomical units from the sun with a period of 349½ years, or 3,557,000,000 miles from Sol, or again if you like better, a little over 5,691,200,000 kilometres. . . ." The last was said with a laugh at the new system of French measures that were in use since Dorr's time.

"Miles will do," remarked Kington drily, "three billion and a half seem too much as it is. But do you mean you have actually traveled that distance, Dick?"

"Twice," was the answer. "There and back, of course."

"Good Lord! And here I was, tinkering with mere theories. But come, you must tell me how you happened to go there in the first place, and what there is to be known about this Abrui of yours . . . rum name that!"

"Abrui means 'home' in the Abruian tongue."

"Nice sentiment! But what's it all about?" said Kington.

CHAPTER III

Some Past History

IN the next half hour Dorr told something of what had passed in the last quarter of a century, of Professor Ezra Rollins' experiments to send a rocket containing a man to the planet Mars, and of the subsequent taking off of the rocket with Dana Gleason and Richard Dorr, the passing of Mars and of the landing upon the more distant world of Abrui.

Kington recalled the name of Professor Rollins, who had held an astronomical chair in one of the American universities in 1915 or thereabouts, but who had been laughed out of the country because of his belief that he could do the impossible. Rollins, it had been said, had disappeared into Africa followed by a band of men whose names bore long strings of college degree initials and who believed implicitly in their leader's views and were with him during the building of the machine. Rollins had straightway been forgotten by the world, but what a sensation it would create when it was learned that the professor had really succeeded in building his rocket and launched it with *two* persons into the Void.

That the rocket had not landed upon Mars was not surprising but it did sound like a fabrication to learn that instead it had dropped upon another world, a ninth and undiscovered planet in the solar system, which, instead of depending upon distant Sol for light and energy, had a satellite sun of its own to provide those life-giving necessities. It didn't seem possible that such a planet could have escaped detection, but then Neptune itself had not been discovered until 1787, and astronomers were not yet ready to agree positively that nothing lay beyond that distant globe.

"The reason for its not having been found in the last fifty years," explained Dorr, "is believed by Abruian astronomers to be due to the fact that during that time the planet is in the lag of Neptune, in its shadow, and is only now dropping behind, for although Neptune's year is shorter than Abrui, it is a larger planet and has taken that many years to pass by. Even now, were the astronomers to search for Abrui, it would be a difficult search for its influence is so small in proportion to that of Neptune as to be negligible. And Tradr, Abrui's sun, does not throw out rays as does Sol and would appear no more than a pin-point of light, too small, in fact, to be detected against the myriad stars in its background.

"Of Tradr, Abruian scientists have many opinions. The one theory generally accepted is that once the satellite was a cold moon circling their planet, but it 'caught fire' from the great deposits of radium which are ever 'burning' and now gives to the planet its light and its heat. This theory is suggested to them by the fact that Abrui itself is rich in this element, and is to them what fire is to Earth. Thence, there is eldimun, an ore which is not found on Earth, but which is ignited in instantaneous combustion in the presence of radium, burning with a pinkish glow. This, as far as the Abruians have been able to learn, burns infinitely. Tradr glows pinkishly, and it is supposed without a doubt, therefore, that the satellite has also great deposits of eldimun. which upon catching fire, will burn far into the ages. It is hoped so by the Abruians."

"Now, let me get this right," said Kington after Dorr had finished his long tale. "In 1924 Professor Rollins sent Dana Gleason, whom he had chosen for a passenger for his rocket because of that person's capabilities, not knowing that in truth she was a woman, masquerading all her life as a man, because of her dead father's dislike for the female sex. You, Dick, inadvertently discovered her sex, and at the last minute decided to accompany her, rather than let the truth break the heart of the old scientist, who had become your friend there in Africa, and thus prevent realization of the man's life ambitions, also because you believed that you and she could work together in his behalf?"

"Wait a minute, Wally, you put too much stress upon my altruistic motives. I went especially because of the woman I had discovered. I loved her."

Kington waved the aside away. "It matters not what construction you wish to put on it . . . you might have halted the whole thing if you had confessed the truth to Rollins, and spent your life with her on good old earth. . . ."

"More likely I would have lost her altogether, you

mean, Wally, if I had had the temerity to have exposed her. . . ."

"Oh well, whatever the intents or purposes were, they count for nothing now. It was the action! Well, to continue . . . your rocket passed Mars and then you two thought you were headed out into Space when you passed beyond Neptune. Instead, you struck Abrui!

"Now it happened that Miss Gleason was picked up by one, Moura-weit who was scouting about the planet when your shell exploded. He searched the ruins for the complexion and coloring of a Gor, one of the barbarians who roved the land into which your rocket had fallen. So he carried Miss Gleason off to his civilized country while you in turn fell into the hands of the barbarians themselves. And each of you thought the other had died in the ruins of your vehicles, each taking up life anew as you found it. To the barbarians you came in the light of a saviour, fitting an old prophecy of theirs that expressed a hope for one to lead them back to the lands of which their enemy, the Tabora, or silver men of Abrui, had despoiled them. Knowing you as I do, a man who can not listen to the plea of the underfellow without going to his aid, you took it upon yourself to bring these poor, down-trodden bronze men back to their birthright, unaware that the woman you loved now lived among the Gor's oppressors.

"That you managed to overthrow the Tabora with your crude cannon and home-made gunpowder and rescued Dana Gleason from a marriage of convenience with this overbearing Moura-weit, who saw in her the means to his own ends, stacks of penny-novels, but it always was your lot, Dick, to do the right thing!" And Kington smiled as he recalled other times when Dorr had done the right thing.

Laugh wrinkles showed around Dorr's brown eyes and together the two laughed over old times. It was then that Ezra-weit broke into a flood of words that were wholly unintelligible to the scientist and smiling, Elsie Rollins-weiti, interpreted them.

"My son," said she, "understands English, only he is backward in speaking it—but he wishes me to tell you that Dorr is too self-effacing; that before dealing with him, you should know that without him Abrui could never know such peace as exists on that world at the present time. When Richard overthrew the Tabora, he forced the conquering Gora to accept his terms, namely, not to send the silver men back to the wastelands from which they had come in the past, conquering both Gora and Moata (golden men), but that the three races of Abrui, the golden men who had been Tabora's slaves, the silver men and the bronze men should live at peace with each other on the shores of the single ocean Sehti. Seeing the justice in his demands, the three nations in turn forced Dick to become their Ur-Kirada (over-king) so that he would be at their helm and teach them how to live in accord. So at the present time, Richard Dorr, formerly of Earth, is no less than the First Citizen of his adopted world!"

DURING the time she spoke, a rare blush of red overspread the Ur-Kirada's face, but he joined in the laugh that came at his expense.

The woman continued to speak in a voice that was as beautiful and as colorful as her face was lacking in those attributes. "And what's more, Mr. Kington, Dick taught the Abruians the art of being kindly, not only to nations, but to individuals also. With the downfall of the Taboran state, Moura-weit, who had had himself created Urtor, or over-prince of Tabora with an eye to an Ur-Kiradaship, became an outcast because he had failed to save them from the ignominy of defeat and was looked upon as a traitor and a price was put on his head. His people had been awakened to the fact that this ambitious man sought power to meet his own selfish ends without thought for the people themselves, and now they were demanding his death and his dishonor. With the aid of Ubca-tor, his one loyal henchman, a prince of the realm, Dick arranged for Moura-weit's escape from the planet in an interplanetary machine which was then but begun and which was finished in secret, and so allowed the man to flee the ire of his fellow-men. Then Dick told the people of what he had done, begged them to pardon Moura-weit so that when he should return home he should be accepted as their friend instead of as their enemy."

Kington was thoughtful after that but soon he spoke again. "And what of this fellow? What happened to him? Is he safe at home in Abrui now, raising a thriving brood of Abruians?" he asked and did not see the spasm of pain that crossed Elsie Rollins-weiti's gentle face.

"That again," said Dorr, "is another story. And although Abrui has forgiven the man his duplicity, and honor him for his great work and discoveries made in their behalf, he never returned to Abrui. There were only his wife and his son to return to his homeland when he met an honorable death on Kal, the planet he discovered in the star-system of Alpha Centauri, which, as you know, lies the closest of all the stars to our own solar universe. This, Wally, is Moura-weit's wife," he placed a hand over Elsie's hand which was lying in her lap, "and the boy is Moura's son."

CHAPTER IV

Concerning Abrui

IT was Kington's turn to feel embarrassment, but he felt that it was because of Dorr's own negligence in not making a more fitting introduction that he had made the *faux pax*. Now Dorr realizing his own omissions went on to add; "Elsie is the niece of Professor Ezra Rollins, the man who invented the rocket that sent Dana and me to Abrui. She was an orphan at the time when the professor left for Africa, and he took her with him, then a child of ten, I believe. My mine, as you know, was but a few miles from the plantation Rollins purchased, and we became good friends.

"Elsie was about fifteen when the rocket made its departure, and for the next five years she continued to live with her uncle who had become a broken man when he realized what he had done in sending us two off into Space, possibly signing our death-warrant. Had he known at the time that Dana was a woman, he might have lost his mind entirely. As it was, the five years were spent by him in praying each night for a message from us. He had the duplicate of the radio set we carried in the rocket, which was destroyed when our shell exploded in Gora, and he hoped against hope to hear the welcome signal Dana had promised to use in announcing our arrival on Mars.

"And although Dana, with a corps of engineers, built one set after another and strove to send sound across space, she never did succeed. Instead when Moura-weit

and his ally, Ubca-tor, departed in their space-flyer from Abrui, Dana commissioned them to deliver a document in which she had described the world we had discovered. She also presented Moura with her own diary for proof that truly he came from her. So Moura-weit came to Earth with his message to the old scientist, who in turn demanded that he be carried with his niece into Space, so that he might see the wonders of the universe at first hand before he died."

"Gad!" exclaimed Kington, "and you—Mrs. Weiti, you have been in the Void—you traveled to Alpha Centauri, you say? Did the Professor go with you to that distant world of Kal?"

Sadly Elsie shook her head. "No, he lived only a few months, and in that time we were still in the confines of the solar-system. In fact, he never reached Mars."

"And you had the courage to go across Space?"

She nodded; "I would have followed Moura to the ends of the Cosmos!"

"What a man he must have been, despite what you've told me of his short-comings!"

"Moura-weit," she exclaimed, "left Abrui with the hope of atoning for his sins, in turn to reap from the universe knowledge that would improve the lot of his world and through his efforts place its civilization on the pinnacle; but in the meantime he sought solace in the immensity of the Void. He saw himself apart now from the ambitious man he had been, and he had learned from Richard Dorr the mistake of putting one's self above his fellow men. The remainder of his life, therefore, was spent in expiating his past sin. All he did henceforth was in behalf of Mankind. He went to the distant planet Kal only for the honor it would bring to his own people, and to save another from making the same mistakes as he himself had made! Can you wonder that I was glad to follow such a man?"

A silence fell on the gathering after that eulogy, but again Kington's inquiring mind brought them back to the present.

"I wonder," he asked, "if it would be asking too much —for you to tell me something of that tremendous journey and what you discovered at its end?"

The woman smiled a far-away smile, and some of the wonders she had seen were mirrored in her gray eyes. Then she shuddered as she recalled some of those terrific experiences that had deprived her of her love. "No one," she said, "has ever heard the entire story of what actually took place, but I feel that it should be told. Perhaps, sometime, when I can compose my thoughts. . . .?"

Kington recognized the uselessness of further urging, for he was never one to thrust demands upon those who did not wish to comply. For the second time he fell to studying Ezra-weit. He could not get accustomed to the boy's strange coloring. Dorr again took up the conversation, for as he had already said, he had come to Earth with a definite purpose and he wished to lose no time in getting down to business. He spoke now at length about his adopted world, explaining many of its features to his one-time chum.

"It has taken us almost twenty years to erase prejudice of race from Abrui, Wally, but at last the three races, golden, silver and bronze men, dwell in harmony side by side, and we hope in time, with the blending of the three, to develop true brotherhood of spirit. Now they have sent me as emissary back to my own world in hope that fellowship may be established between our two great worlds! Much has Abrui to offer Earth in the way of barter, just as Earth can give fair exchange to Abrui!"

"WHAT fields you open up, Dick. It's—why—it's almost beyond human conception," lamely observed the renowned scientist. "Tell me something of Abrui's needs. You say that she has untold deposits of radium? Our own progress in various lines of endeavor suffer because we have so little. In what state is it found—in uranium or some of the compounds?"

"It is in a raw state and much of its sources are untapped! To the Abruian, it is what fire is to us. Now, what Abrui needs most is iron and nickel, which are sadly lacking, strange to say, although there is plenty of lead, which is, of course, both the parent and the offspring of radium, and although the Abruians are most able in making use of that soft heavy metal alloyed with other metals, they need iron for steel and lighter materials. Aluminum is unknown.

"However, Abrui is far more interested right now to learn of your newest developments in the field of radio transmission. Radio is a very new science on the planet, introduced as it was by Dana, when she sought to send out messages to the Professor. She failed to reach him, but the Abruians seized upon the invention, for although they are as far developed in most of the sciences as Earth, more so in some, wire and wireless transmitting was unknown to them. Communication between nations and cities was carried on entirely by letter and messenger, although they have developed a science that the people of Earth have as yet entirely overlooked. That is the science of mental telepathy. So efficient are the Abruians that a man's mind is wholly open to his fellow-beings unless he wills it differently. Also it is possible for them to project their thoughts in picture form upon screens for all to see, sometimes even to the next city, much in the same way as you are projecting by television today.

"Moura-weit was perhaps the greatest exponent of this art, and that is what added so greatly to his power over his people. He was able to detect the thoughts of a man in the next room or house, and he could alone throw his thoughts forth for all to see, whereas it is difficult as a rule for two or three men with their combined efforts to do this thing. Ezra-weit is fast learning to do likewise!"

Kington's eyes again went to the strange youth, but as Dorr continued speaking, his attention reverted to the speaker.

"So, you see, when Dana gave them the rudiments of radio, the Abruians were wild with enthusiasm. They have made great strides with it, but still they lack some of its essentials, mainly because of their lack of the proper metals to bring about the proper changes. Nor have they television, since that was not invented when we left Earth twenty-five years ago. And it is to Earth that they look for furtherance of their own developments in this great field. I am certain that our fellow men would be delighted to have an enlarged market for their wares, while they could in turn find use for many of the Abruian commodities in the world markets.

"The Abruians, therefore, would like to propose a commercial interchange. They will build a fleet of space-flyers, modeled after Moura-weit's ship, the *Yodverl**, the plans of which he gave freely to his world.

*Meaning "Ship of the Void."

Who knows but that in a few years we will have a passenger-line established whereby tourists from each of the worlds can visit the other planet? Does that not pique your imagination, Wally?" and Dorr was grinning broadly at the expression on the other's face.

"Man alive!" the scientist exclaimed, "you are looking upon the first passenger of the new service. Or perhaps I'll go as supercargo, or even stowaway, if necessary!"

They all laughed together over the man's enthusiasm. It was hard to picture this rotund little man as a stowaway.

"Come," said he, "we must announce this great news to the world! But wait—it is late—far past the luncheon hour, I fear. How inconsiderate I've been in keeping you talking while you must be starving. Now, now—not another word until we've eaten!" As he spoke, he rang a bell and Janson appeared for orders, including strict attention to the fact that no one, not even the King of England, was to be admitted to the house for the remainder of the day. Janson proved his worthiness in that moment by announcing that he had had the chef keep a luncheon ready to serve for the last hour and a half. And he led the visitors to rooms above where they might prepare themselves for the mid-day meal.

CHAPTER V

The Girl-Element Is Injected

TRUE to his word Kington would not allow a single word spoken of the future until the meal was eaten, but he in turn spent that time in entertaining his guests with a panorama of the world's history of the preceding twenty-five years, much of which was digested with wonder and astonishment by the two self-exiled Earthlings. Ezra listened avidly to the talk, more interested, it appeared, in things of Earth than he had been in those of his own familiar world. However, he was never too interested in what was said to forget his attentions to his mother, whom he seemed to observe so that her every wish was fulfilled without the need of a word. Too, he often asked a question in halting, carefully enunciated words when something was not quite clear to him. Janson, struck by the youth's queer appearance, hovered around him as much as his duties of serving would allow.

With the meal ended, Kington ushered his guests into a drawing room, a large chamber excellently furnished in the newest prevailing fashion, which considered bodily comfort first. There were many deep, overstuffed chairs, well upholstered, with tables set conveniently at hand. Large windows admitted the afternoon sun and gave the room a warm feeling. The host saw to it that his guests were comfortable before he himself took a chair. Ezra found the cigarettes of his host to his liking and Dorr puffed on a Havana cigar with enjoyment.

"We have cigarettes on Abrui, now, made from a leaf that was found to be almost a counterpart of the tobacco leaf, except that it makes a poor grade of cigar," the man said by way of apology for the attention he was giving his smoke.

"You must have found it very difficult at times to adjust yourself to the new world," observed Kington.

Dorr nodded and his eyes took a dreamy look as he recalled some of those adjustments he had been called upon to make.

"I have been wondering why you have neglected to bring your wife back with you, Dick? Or does she prefer the new world?"

A sigh escaped the man. "She does prefer the new world, Wally, but she did want to come to earth. However, our people were adverse to both of us coming this time. Perhaps they feared we should not wish to return to Abrui, so they trumped up a story that they needed one of us while the other was gone! You see, Dana has done more than I have done for the planet. It has her heart and she loves it more than she ever loved Earth. She had, you know, a strange life here, being raised as a boy all her life by a father who hated all womankind, so that when he died in the World War, she really had nothing to hold her to Earth. Abrui truly means home to her.

"Hence, when we decided that one of us were to come to Earth Dana insisted that I go, since she believed I could do more than she could here, and I left her home with our two children. I wanted to bring the boy, Duris, but Dana would not allow it. He must wait, instead, until Dana can come with Mural, too." And with an air of "enough of that," Dorr plunged into business.

"Now, tell me, Wally, have I come to the right person when I called upon you to help us? Our ship lies not more than sixty miles from here in a wild part of the country, where I trust it will escape detection until the proper time. Aboard are twenty Abruian men and women whom I thought it best to bring along—for proof—if there are none to believe our spoken word. And I place ourselves and them in your hands."

"You may feel certain, Dick, that this duty you have placed on my shoulders is indeed a trust. I shall do all I can, even though it seems almost too great for me. The program, however, lies with you. In twenty-four hours I can have some of the greatest of the world's scientists at your feet, and another twenty-four hours will bring the ruling heads of every nation to the call when the truth is out. What do you suggest? Shall we call only a chosen few before the news is given to the public?"

The next hour was spent in discussing plans. Elsie Rollins-weiti sat quietly by listening to what was said, now and then giving a good suggestion. Ezra, however, paid them little heed. Boyishly, his eyes had flown around the room at the unfamiliar looking furnishings, ornaments and fittings, and when he thought the others too engrossed to notice him, he got up from his chair and wandered about inspecting various articles at close hand. So he had found the magnificent radio-set in the far corner of the room that formed a small alcove.

Seeing that the adults paid him no attention, he sat on a small chair and studied the formidable array of dials and the neat little television screen set in its center. To one side was another smaller screen with two small dials beneath it with an individual amplifier, but he was diffident in inquiring of his host what that was for. After a few tries on the main dials of the instrument, he learned the combination and with its volume tuned low so as not to disturb the others, he twirled the dials to find what was on the air. One by one he found the various broadcasting stations of the world and listened to each program, news reports, music, lectures, orations and drama, and in fact the whole gamut of the broadcasting world. What interested him the most was the television screen and as he watched the dancing, the posturing, the moving figures of people, an exclamation of wonder escaped him now and then.

AN hour and a half passed in this fashion when Kington came to interrupt him. The conference of the three had broken up, and it was time to get to business. Excusing himself for interfering with the boy, Kington turned the dials below the smaller machine that had intrigued Ezra-weit. There was a moment's pause, thence a silvery bell sounded and a light flashed on the screen into which swam a face. It was the face of a venerable old man who smiled a greeting to the scientist facing him. Unobtrusively Ezra moved away from the machine to allow the two to speak without his interference, joining his mother and Richard Dorr on the other side of the room.

When the conversation was done, Dorr strolled over to his friend at the machine. "I take it," he said, "that this is your new type of telephone, eh? They predicted it in my day. Rather clever, I should judge."

"Yes," was the rejoinder, "we've done away entirely with the old style telephone and use the wireless or radio type instead. Every set is provided with its own particular wave-length, and by dialing the wave-length number of those we wish to speak with, the central switchboard acts upon it as it did in the old days. Of course, if the 'line' is busy, a buzz indicates it. We call the machine the Tele-Vis-Vox.

"Wonderful, but tell me, how can you keep another from listening in? Or do you sacrifice your privacy?"

"There is what is called the jumbled sound control, and once the two parties are connected, it is impossible for another to 'listen in' as he will hear only distorted sounds. Of course, for greater secrecy, code is sometimes used. However, as once the wires were controlled by licenced companies, the air is now controlled by the various governments with an international governor presiding over all, and only registered stations are given right of ways. A special bureau is maintained to keep the air free of 'listeners in,' or amateur broadcasters, so at no time are we bothered with illicit traffic of the air."

Kington had other parties to "call up" and Dorr stayed at his side as he addressed them. When they were finished at the Tele-Vis-Vox, Kington called for Janson, to whom he had orders to give. Mrs. Weiti was to be shown to a guest chamber where she might rest, and there was to be a dinner at eight o'clock for seven persons, and on the pain of death no one was to be admitted to the house until the master had returned.

Ezra-weit was asked if he should like to accompany Kington and Dorr upon the round of business that they had to attend, but the youth shook his head. He preferred to stay in the house, or to be more exact, at the radio.

It was several hours before the two returned and with them were three strange men and a woman. They were not strange to Ezra, however, for they had been his companions on the journey from Abrui. Each of the three men were representative of the three different races of their planet, the golden, silver and bronze pigmented races of Abrui. They were by name respectively, Ulja-tai, Ubca-tor and Kalu-tor. The woman who was Tabora, or silver-hued, was called Alba-tais. The suffix to the name indicated that the first was a crown-prince, in direct line of the Kiradaship or kingship of his race. The other two were princes of royal blood but with no connection to the throne. The woman was a crown-princess, but as women never succeeded to the throne on their world, her name merely denoted that she was the first-born daughter of the Taboran kirada.

Ulja-tai was a Moatan, or golden man. Hair, and skin and even the lips were golden-hued with only the vermilion red of his eyes and the black pupils to relieve that monotony of color. He stood about six foot three inches and was very slender of body, broad shouldered and narrow-hipped. His features were fine and delicately drawn, forming a severe thoughtful face with strong lines of repression around the golden lips. Such a face one would expect to find in a man of a race that had been held in slavedom for thousands of generations and who now finds himself raised to a responsible position. During their centuries of thralldom the Moata had rigidly perserved their castes so that when freedom came in the shape of Richard Dorr, each man of them had slipped easily into his rightful place without confusion.

Ulja-tai was clothed in true Abruian style with tight-fitting trousers that seemed molded to his limbs, a loose blouse that was sleeveless and square-cut at the neck and hung half-way down the thigh. Trousers and smock were of a silkish cloth in vermilion that exactly matched the shade of their wearer's eyes. A leather girdle, gold-colored and encrusted with many precious glistening stones, encircled the waist. The leather sandals were of a suede as soft as doe's skin and were laced half way up the calf of the leg. To the shoulders of the blouse was attached a long cape that fell into deep folds to within an inch of the heel and was full enough to allow of its being drawn entirely about the body. The cape was lined with the skin of some strange animal that was yellow with vermilion stripes.

Ubca-tor, the silver man, was somewhat taller than Ulja-tai, standing easily six-feet six inches. Like Ezra-weit he had the silver hair and skin of his race and the lavender eyes, but whereas Ezra's skin had more the appearance of his earthly forebears with only the suggestion of a silvery tint underlying the surface, Ubca-tor was all silver, like a polished silver statue. His features were also regular, and in his eyes there seemed a sorrow lurking, as if perhaps he were regretting the future. He was, in fact, the companion who had gone with Moura-weit in his exile and shared in all his adventures to the time of the other's death. And still he sorrowed for his dead leader even as Elsie Rollins-weiti suffered. He was dressed as the golden man, only his costume was of a blue that blended well with his lavender eyes.

The third Abruian, Kalu-tor of Gora, the bronze man, was by far the tallest of the three, standing a good five inches above Ubca-tor's head, but the fact that he was so heavily muscled made him appear squat beside his slenderer companions. To Kington, he looked more natural as a man, since his bronze skin gave him the appearance of the American Indian to a certain extent, except that his long silky hair matched his complexion and his eyes were practically hazel. Nor were his features as delicately drawn as those of the golden and silver men. But there was wisdom in his face and a kindly look in his eyes.

All three Abruians were clean-shaven and all wore their hair square cut at the chin with bangs on the forehead. A close examination showed that they were wholly beardless, nor was there any sign of old age among them; no sagging muscles or graying hair to give the impression of the years, only the deep cut lines about the mouth and the eyes themselves told that these were

not young men, the eyes expressing the story of the years spent in gathering knowledge, understanding and sagacity.

The woman Alba-tais resembled the men in that last-named feature. Wisdom lay deeply in her eyes, that were more orchid than lavender, but her body showed nothing of age. She was as straight and upright as any immature girl, although Alba-tais could have told you that she was the mother of several children. She was dressed identically like the men, except that the colors of her suit varied. Her blouse was of deep rose and her trousers a rich old ivory, and the jewels in her girdle were all black but glowing with the fire of the diamond.

Elsie Rollins-weiti came down the stairs at the moment of the entrance of the party and greeted her fellow travelers warmly in their own tongue. Ezra had already drawn Ubca-tor aside to show him the wonderful radio set that Kington owned. Then Janson appeared to announce dinner although for several moments he was held speechless with surprise at the appearance of his master's guests. And for all that the servants were fascinated by the strangers, the dinner passed off fairly well.

After they had repaired to the drawing room for coffee and cigars, several more guests were admitted to the house. These were four of Kington's confreres, and Moran, the prime minister of England. The talk, of course, resolved around Abrui and the benefits to be derived from Earth by commerce with that distant world. It was late when the five made their departure and Kington's guests were taken to their rooms. It was a question as to where they could put the great bronze man to bed, for although the others could manage to make themselves fit in the accommodations at hand, there was no bed to fit the Gor. He fixed it himself by electing to lie on the floor, and with a mattress and pillows he was made comfortable at last.

CHAPTER VI

The Mental Powers of the Abruians

WHAT occurred during the following weeks is the common knowledge of the school children, and there is little need of giving for each day's performances more than a cursory glance at what took place in the city of London, when the extraordinary news of the arrival of the space-voyagers was given to the public. The first day was spent in acquainting the scientists of the world with the news and of presenting them with the proofs, namely the Abruians in evidence and explaining to them what the Abruians had to offer to Earth.

The second day brought together some of the greatest heads of the Earth's many nations, and then it was that Ezra-weit, in company with several of his fellow-men, gave mental demonstrations. Of these we will speak more fully, for never before had the people of the world seen such a phenomenon.

In the great hall where the meeting was being held a large specially constructed screen was set upon the platform. It was opaque, and it had been demonstrated for the benefit of any Doubting Thomas' that the screen had no accompanying mechanisms. Thereupon the hall was darkened, and taking their places before the screen, Ezra and Ubca-tor sought to prove their mental powers.

At first it was difficult to distinguish the shape that was taking form upon the screen; it seemed dimmed and distorted, but slowly it cleared, the screen itself grew brighter as the youth and the older man gained mastery over it, and on it there was what appeared to be a round terrestrial globe. It had a small satellite moon hanging not far above it, while another more distant and smaller moon shone as if from across a wide space. Those in the auditorium realized it was not Earth, and Dorr who had taken his place on the platform, explained in one word, "Abrui!"

It could be noticed that the world was different from Earth. In relief they saw its mountains, plains and the single ocean almost circular in shape with rough, irregular shorelines and a large island continent in its center, while far inland from the ocean, a hundred and fifty miles or so, were ranges of rough mountains almost encircling the whole ocean. The low hanging globe that had at first been taken for a moon was now glowing with a warm rosy glow of its own, giving its light to the planet, while the second moon so far and distant proved to be old familiar Sol shining as a moon on this distant world, less than a quarter the size it appeared from Earth.

That picture blurred now and another formed itself until the audience was gazing down upon a landscape, a small portion of the world along an ocean shore. The country was comparatively flat except for a few sand-dunes beside the water, but several miles inland hills began and the country presented a pretty rolling aspect with the majesty of purplish mountains far in the background.

Again the scene shifted and it showed a country under cultivation, large farmlands, small park-like forests and large pasturages lay below. Some sort of cattle were grazing and the shapes of men working with machines in the field were projected for all to see. Another change and a city sprawled across the screen. It was a unique city built on the slope of a hill, one side of which was a sheer bluff with a drop of more than a thousand feet to the serene river that came meandering through the countryside. Atop the hill on what appeared to be its crown, a mile in circumference were erected a half a dozen or so fine buildings of white stone which were no more than one story in height, but architecturally presented beautiful, graceful lines. The buildings were grouped so as to form three sides of a square, and around the buildings were spread beautiful gardens. The open side of the buildings faced the hills' slope and from them a broad flight of steps dropped down the hill to the very foot.

Dorr did not speak this time but somehow all those in the auditorium realized the fact that they were gazing down upon Tunka, the capital of the Taboran nation, and that upon the hill-top dwelt the ruler and his family. And that here was also housed the parliamentary building and the quarters of the royal guard.

Next they were looking down from the corona to the city that swept terrace after terrace down the hill to the plain below. Ten wide terraces were to be counted on which were set lovely white houses with their gardens and parks, each terrace being divided from the one below by a low wall covered with vines and greenery. Below the last terrace was a high wall, and on from it the houses, smaller, less beautiful, were set closer with smaller gardens and smaller parks, while only wide avenues intercepted them. These houses spread all

around the foot ot the hill until they met the shore of the river on either side of the promontory. And on either side of the bluff two bridges, causeway-like, but with draw-bridges set in their center spanned the river to meet on the opposite side the wide undulating flats upon which were dozens of long, low buildings, each a thousand feet by two thousand feet, one story in height, symmetrically placed with wide avenues to separate them. At the river were docks and large vessels resembling the whaleback grain and ore boats of the Great Lakes of the United States stood in the water.

AGAIN those seeing this scene for the first time understood as readily as though Dorr had explained the meaning of all this. They grasped the fact that only the members of the nobility were permitted to dwell in the fine homes on the terraces, the commoners in the city below, that the terraces themselves were divided as to rank. The tors, or princes occupied the terraces just below the hill's corona, the weits, or baronets, perforce staying to the lowest terrace, while again the commoners also lived according to their castes, separated by the avenues only.

The fact that on Abrui money was unknown came to the spectators in the assembly, even as the scenes had presented themselves. They understood that on Abrui a man was born to his rank as he was born to his worldly possessions that were allotted him under governmental supervision according to his caste.* The commoners provided the skilled and unskilled labor, the nobility the leaders and supervisors. Yet with it all caste was not so iron-clad that a laborer might not through his efforts lift himself upward among the leaders and onto the terrace. Only he did not lift his family with him unless his peers made special dispensation for them.

Once more the scene was changed, and the large island within the single sea of Abrui swam into view. This was Ora, the seat of learning of the planet, which being neutral politically could not be prevailed upon by any of the Powers to work in their behalf singly. Here a fugitive, outcast or exile from one of the lands could find sanctuary and he could not be extradited against his will. Moura-weit had come here in his time and his trouble and Richard Dorr and Dana Gleason of Earth administered to their adopted world from their seat on this island. And here came men and women from all the planet to study and devote themselves to science. Abrui's greatest works were performed on Ora, Ora which knew neither caste nor class and where each was permitted to follow what line of endeavor he chose for himself as long as it was for the good of humanity. The simple lines of the hundreds of buildings that covered the island attested to the fact that here was simplicity of understanding carried to the nth degree.

There were even more scenic views of the planet. There were more cities like the first, seashore and mountain resorts, universities, mills, factories, mines, and the great plantations that lay on the other side of the mountain ranges. There was old Goraland of wastelands, arid deserts, swamps and jungles, wherein Dorr had found the bronze men subsisting miserably before he forced the Tabora to give up a portion of their own fertile, well-watered lands to the Gors who, once civilized, had become semi-barbarous under the conditions which were forced upon them.

There were more scenes, but now with each succeeding view, the screen was less clear, sometimes it blurred and grew indistinct. Then the screen became dark, and the lights of the hall were switched on again. The show was over. Ezra-weit and Ubca-tor had taxed their powers and could project no more. People rose in their seats and the acclaim was terrific. The names of the two were called loudly but they, having slipped behind the stage, refused to appear.

Richard Dorr took the platform to explain that the wonderful demonstration they had just been shown was the product of the minds of the two who had given it to them, and although the performance might seem miraculous to them, it was a daily occurrence upon Abrui!

CHAPTER VII

The *Yodverl*

THE following day Moura-weit's mighty Ship of the Void, the *Yodverl,* was brought out of hiding and was docked upon the great airport atop the World Air Lines Building. First, a small party of scientists were taken aboard, then officials from over the world, and at last the general public was permitted entrance, but that soon became impossible. Hundreds of hundreds and thousands of thousands had come flocking to London to view the ship at first hand and to allow them all to visit it personally, would have necessitated the ship's lying in dock for months to come. Thereupon all the world had to be satisfied with viewing it through the television.

Pictures are preserved for us today; and there are the accounts to be found in history books, but for fear that some detail has been forgotten we shall outline its features here. One thousand feet in length the *Yodverl* was, cigar shaped and snowy white, constructed of forty layers of that serviceable Abruian glass the shell was stronger and more rigid than the diamond. It had that unique quality, whereby those outside could not see within, but those in the ship at various vantage points could see outside as clearly as through ordinary plate-glass.

At each of the conical ends of the cigar were set the great disks of the meteorite deflectors, machines that meant so much to the safety of the ship in Space. Under the port at the stern of the ship was set its airlock by which voyagers could leave the flyer without affecting the atmosphere within the ship when on an alien untried planet, but the main entrance lay in one side of the machine, about fifty feet from the *Yodverl's* nose. This doorway was circular, and fitted so carefully as to not be seen from the outside when closed, but opened upon invisible and intricate hinges revealing a corridor twenty-feet long, into which the door itself fitted perfectly when not in use. The anteroom that this door revealed was also the study and library of the flyer, containing thousands of Abruian and earthly books for the traveler as well as the ship's log. Three doorways opened from this chamber, the first leading into the pilot room that took up the entire forepart of the ship being set directly in its nose. Here were the controls that directed the flyer through space, although the motors were located far aft. And here one had a clear, un-

*Moura-weit had made himself Ur-tor (overprince) once, and had his people thought he had gained that high position fairly his son would have been born a tor instead of a weit. On the return of Moura's wife and son the Taboranas had wished to dub them with princely rank, but this Elsie Rollins-weiti refused, preferring to call herself weiti (Lady) instead, as her husband had called himself weit after his exile.

obstructed view of the heavens above, and out in space, on either side and below.

On the floor forward, or rather in the curvature caused by the nose of the ship, was set a great stellar map that was highly interesting to the astronomer showing the solar system in miniature and a small area of the Universe round about in proper proportion as to size and distance. To one side of the controls was an odd arrangement of small round globes set in a circular tank filled with a heavy liquid. Again these represented the solar system, Sol, and the system of the ten planets known to Abrui with their satellites and a number of the largest asteroids. Intricate machineries controlled the movements of the globes, which showed at all times the exact position of each planet in its relation to their star even to the slightest deviation caused by the action of each planet upon another. This mechanism was invaluable to the interplanetary pilot, as were dozens of other instruments in the room, that would have been interesting only to the astronomer; chronometers that told solar and sidereal time on various worlds, instruments that felt out the dangers of space, instruments of all sorts and descriptions without which space-navigation would have been virtually impossible. Practically all the instruments to be seen were the inventions of Moura-weit who had willed to his people all his effects. And on studying his achievements, one has to concede that he was possibly one of the greatest men of all times.

The second door of the ante-room opened into the laboratory where one was to find more intricate and delicate instruments for various uses. Here was the Venerian telescope whose complicated lenses made it available for use within the twenty foot deep shell of the *Yodverl*, and there were more intricate and delicate instruments for various uses. Here the scientist had developed most of his works, his gravity nullifier, his meteorite repeller, the ship's own gravitational field. Here he had accomplished the last steps of developing solids from the ether stream, and here were to be found three uncompleted machines that the inventor had not finished at the time of his death. One of these appeared to be a super-radio set, but was in truth the beginnings of the machine that is so useful to us of today, the Solid-Transformer, that sends solids from one locality to another by translating them into their atomic vibrations and reassembling them again into their specific forms at their destination. Luckily Moura-weit had left his notes so that his son Ezra could succeed in completing it for the use of the two worlds of Abrui and Earth.

THE third door leading from the anteroom opened to the living quarters of the ship. In fitting out his vessel, Moura-weit had copied the appointments of his own home as exactly as he could, so on entering, one found himself immediately within the confines of a typical Abruian home. The first chamber, the atol, was identical with the living room of the Earth home, for here the family gathered when the day's work and fun was over. But the Abruian atol serves more purposes than the drawing room of our homes. It was also the recreation room, as well as the dining room, resembling the ancient Roman atrium in some respects. The room was thirty feet wide and forty long, and in its center was a small swimming pool in the middle of which a tiny fountain played. Potted flowers of Abrui grew around its edge and on the mosaic tile floor were arranged wide comfortable couches, and a number of Abruian metal three-legged chairs, far more comfortable than our own. The walls of the room were ten feet in height and were also tiled, depicting a typical Abruian landscape scene with a city on one hill and the two suns, Sol and Tradr, and the satellite, in the midday sky.

The ceiling of the chamber was the clear white glass of Abrui, the inner skin of the ship's shell. And here we come across the strangest features of all of Abrui. Fire to them is of little use because of their great deposits of radium and radium also supplants electricity, Radium alone spells power upon Abrui. Thus by treating the glass roofs of their homes with a radium solution, the Abruians force their sun to do double duty for them. The radioactive quality of radium is such that during the day the sunlight is absorbed by it, and at night becoming flourescent it gives off the light thus received when the sun sets, just as phosphorus gives off light when darkness sets in. By imbedding tiny invisible wires through the glass, it is possible to switch off this light when required by arresting the action of the radium particles. So in the case of the *Yodverl,* its entire one thousand foot length with it twenty-foot shell, was in truth a great storage battery absorbing heat and light when in the sun's glare, dispensing it with the coming of darkness.

The second room beyond the atol was called the dof, and was the inner private room of the family. The dof like the atol had tiled walls picturing a more intimate scene in a garden with the life-like figures of men, women and children in their leisure moments. Flowers grew about the walls so that they appeared to blend into the picture itself, or rather it made the observer feel as though the painted figures would soon turn to speak to him.

Beside the two entrance doors at either end of the chamber, one from the anteroom, the other opening to a long corridor beyond, there were also six doorways on either side of the room, three on either side. These gave access to the sleeping chambers. Four of these rooms were of small size, plainly, though neatly furnished, with a wide sleeping couch, a chair, a chest of drawers and a full length mirror. The walls were of creamy tile, but it was the fifth room that proved most interesting. Here two of the smaller rooms had been sacrificed to the larger one, which was furnished in a wonderful fashion, as though for a queen. One who knew the story of the two lovers, understood immediately that Moura-weit, with loving hands, had fashioned that room for his wife Elsie Rollins. when she followed him into the Void.

From the dof a wide corridor ran for fifteen feet or so with doors lining the walls. The first two doors, one on either side of the hall, proved to be bath-rooms with everything installed for the comfort of the traveler, but the remainder of the doors were the entrances to large storerooms, a small placard on each door naming the articles contained therein in Abruian writing. At the end of the corridor a doorway opened into the ship's galley and kitchen. Here again had been a surprise for the first earthlings who saw it, for in truth the kitchen was a revelation. Had the Abruians nothing more to offer than their unique cooking and refrigerating units they would have found a ready market on Earth, as indeed they did. No longer need the housewife of our planet cry out against the drudgery of the kitchen as of yore, she need only to drop the food in the neat radium-

treated glass dish, and minutes thereafter see each individual portion cooked to a turn!

Yet one can imagine the wonder of the first to enter here to see the unkitchenlike appearance of the ship's galley with nothing more than the plain, clean walls of a room no more than eight feet square in view, but which the twist of a little switch on one wall revealed in all its mechanical wonder. Its walls disappeared as if by magic with row after row of shelves appearing instead, on which were arranged dishes of all shapes and designs, all of glass, all snowy white. To one side stood the refrigerator, enclosed entirely in glass holding fruits and vegetables that had made the trip from Abrui as fresh as the day they had been picked, and yet without revealing any machinery, nothing to keep the viands in their excellent state of preservation. Again it was the radium that gave a "cold-control" as well as the heating devices. Frozen drinks, ice-cream, all could be produced as easily as the cookery was performed. Only the insides of the dishes were so treated as we know so that one could hold within the hand the dish as it cooked a toothsome dinner.

Beyond the kitchen of the *Yodverl* lay the small stable in which were housed the small herd of muti, Abruian cows, resembling somewhat our deer, that were always carried by the space-travelers to provide them with fresh milk, since no amount of refrigeration will keep the liquid fresh and its vitamines intact. To the Abruian, milk is as necessary to his diet as bread is to the Earthman. At the present time the *Yodverl* was carrying eleven of the pretty deer-like creatures. The bull of this particular herd was the descendent of the first mitu to have been born on Moura-weit's first journey to Earth twenty years before.

Mitu have never grown familiar to Earth since we have sufficient bovines of our own breeding to meet our demands, and besides the Earthmen have never felt the need of having to introduce the talking beasts of Abrui to our world. As one knows, the Abruians had long since discovered the language of their domesticated cow as they have of most their beasts and therefore are able to converse with them to a small extent. However, as the mentality of the beasts is of a low degree, the language is very simple and very little informative.

Beyond the stable which was kept as neatly as the rest of the ship, another corridor continued on through more storerooms to the air-lock and into the motor-room, where the small radium motors were locked away.

CHAPTER VIII

The Results of the Great Conference

AFTER the preliminaries with the introduction of the Abruians and their ship were gone through, the greatest conference the earth had ever known was held, and before the week was up, arrangements for a commercial line to ply between earth and Abrui had been completed. Once the Earth people had recovered from their excitement and wonder, the business went swiftly. What held up the signing of the articles for the new commission was the refusal at first of the Abruians to agree to sell to Earth a single one of their interplanetary machines. However, it was Dorr who brought peace to the conference by signing a treaty that was agreeable to both parties.

It was agreed, therefore, that a committee made up of both Earthling and Abruian ambassadors were to have complete control over the building of the machines, allowing but a limited number of the flyers to be built at any time, and thus make it certain that neither world could commandeer a single machine for its own purpose. To the World Court of Earth the plans and blueprints of the machines were to be submitted, to be kept under lock and key, so that if ever the Abruians were to break their contract, the people of Earth would have the means of protecting their own planet. Men of both worlds were to share in building the machines, and as improvements were incorporated in the ships themselves, these changes were to be recorded on the blue-prints held by Earth. Furthermore, five ambassadors from Earth were to take up residence with their families on Abrui while the same numbers of Abruians were to do likewise on Earth, thereby knitting the two worlds more closely together.

In later years, when bitter arbitration was to arise between the two planets over their trade monopolies, the wisdom of Dorr's treaty was to prove itself, but that, of course, does not concern the present history. We do realize the benefits of this inter-exchange between the two worlds today, and we ought to be thankful to the far-sighted vision of that great statesman who made it all possible. With affairs as they are, with the slow assimilaton of the various races of both Earth and Abrui, we can see the day when the two great worlds will be true brothers under the skin. Ezra-weit, son of the Abruian, Moura-weit and of the woman of Earth, Elsie Rollins, is a fair example of what the two great races of each world have to offer. It may take many hundreds, even thousands of years, but in the meantime we see the increasing flow of tourists from both worlds, the migrations and emigrations from one planet to the other, the firm establishments of Earthmen on Abrui and Abruians on Earth.

There are no people more affable and deserving of friendship than the Abruians, no people more kindly and more courageous or inventive. Looking about us, and seeing all the improvements in our own everyday life brought to us from Abrui, we can only be thankful to the greatest scientist of all, Professor Ezra Rollins, who made this possible when he dispatched Dana Gleason and Richard Dorr out into the Void!

But to return to the day we all recall. Twenty years before this the advent of the Graf Zeppelin piloted by Doctor Hugo Eckner had created a furor throughout the world, but it could not compare in any way to the excitement when the *Yodverl* left the World Air Lines Port to return homeward with the good news of the affiliation between Earth and that distant world, Abrui!

It was a bright summer's day when the great ship rose into the blue sky with the ohs and ahs of the multitudes below accompanying it; its great length seeming to fill the heavens as it reflected the bright glare of the sun on the upturned faces. There were to be greater ships in the service between the planets, many times larger than the *Yodverl* which was to be their model. In fact, the first ships of the fleet, two thousand feet in length, are now dwarfed by the gigantic leviathans that cross the Void weekly, but to those watching the *Yodverl* rising into the skies, it was thought great enough.

Never before had there been such a celebration as that. The *Yodverl* was carrying a number of the latest in radio instruments and for seven hours after leaving the Earth's atmospheric blanket, the Abruians were

enabled to listen to the program broadcast in its honor. Today, when radio transmission is carried across the intervening 3,557,000,000 miles of space, the seven-hour program appears to us a poor feat, but to the Earth people it was then a fine tribute to their science and taught that sound could travel through space, despite all correctly worked-out theories to the contrary, and so lead to the ultimate success in that field.

Part II

THE LOVE OF MOURA-WEIT

CHAPTER I

IT was some weeks later on the island of Ora on the planet Abrui that there was a gathering of familiar faces. There was Dana Gleason and Richard Dorr, formerly of Earth, but now heart and soul of Abrui, Elsie Rollins-weiti, also of Earth and her son, Ezra-weit. And there was Walter Kington, late of Earth, that planet's first ambassador to Abrui. Ubca-tor was there also, but he kept himself far back in the deepening shadows.

They were all seated in the lovely gardens of Dana Gleason and Richard Dorr's home on the island continent.

Tradr, the satellite sun, had just then sunk below the horizon in a burst of glory, but old Sol gave a silvery radiance to the scene. Neither Mercury, Venus nor Earth could be picked out of the firmament. Because of their proximity to the sun, they were rarely ever seen from Abrui, and then only pin points of light. Here the planets, Jupiter, Saturn, Uranus and Neptune were more in prominence. Great Jupiter glowed like a tiny half-moon in the distance, Saturn with his rings was brighter, but of them all the great green planet of Neptune lay like a monster sickle but a degree away from Sol.

There was a discussion in the garden in which Dana Gleason, a handsome matron with but a faint show of gray in her black hair, was apparently the leading factor. "Yes, Elsie," she was saying, "I quite agree with Mr. Kington, Dick and Ezra that it is only right that you repeat the tale of your adventures with your revered husband, Moura. It really belongs to the history of Earth and Abrui, for never has there been a greater figure than Moura-weit in all time, and he belongs to us almost as much as to you. We certainly ought to know more about him.

"Here under these familiar stars of his, he would be glad to have you repeat the past. Only tell us, and I myself will write it down later so that all of our worlds can know their benefactor better!"

A slow, gentle smile wreathed the lips of the woman of the void, as the Abruians were wont to call Moura-weit's widow. Slowly she glanced about the circle at its various members. Her eyes lingered longest on the face of her son, then crept beyond the group to where Ubca-tor, Moura-weit's closest friend sat on a bench detached from the others. It was to his nod that she responded before she began to speak. She was silent a moment and seemed to collect her thoughts.

"All right, Dana, if you put it that way it is only right that I do what you wish, only remember, that at best I am a poor hand at story-telling. I wish I had the power to present the tale to you mentally, but that is beyond me."

"You need not apologize to us, Elsie. We know the telling will be hard for you."

THE STORY

ALMOST all of you, began Elsie, were at one time acquainted with Moura-weit. You knew him as a man who was set apart from other men because he was made of other things than men are made of*, a man whose brain had delved into every science and who took from the minds of his fellowmen all that he required for himself! Once, when he was young, he had made the mistake of being too ambitious, and in his ambition was prepared to break any man or woman who stood in his way, but he had learned in a hard school where he had erred and the remainder of his life was spent in considering others instead of himself. Everything he did henceforth was done for the good of humanity, expiation for his early sins And he died because he sought to save another from making the same hideous mistakes he himself had made. He crossed the outer void to accomplish that deed!

When Moura came to the little bungalow on the African veldt where Uncle Ezra and I had continued to live quietly since that memorial night when Dana and Dick had departed ostensibly for Mars, the wounds in his heart had not yet been healed. Moura was just learning the truth about himself and was hurt by what he had discovered. In turn, I hated him thoroughly when he told us the part he had played in the lives of our friends, his villainous attitude toward them, but I pitied him too, for in his eyes was all the suffering he had been through. In bringing to the professor word from Dana and Dick, word that they were safe and happy at last, he had forged the first links in the chain that bound him to his new self!

Moura had not wished to tell us his name after relating the story of the adventures of the two Earthlings on Abrui in which he had figured so strongly as villain, that he had all but ruined their chances for happiness, and all but ruined a world, but he was too much a man to lie when Uncle Ezra asked his name, so he had given us the truth. Again, he had no desire to carry us with him into space; he wished for no other companionship as yet but that of his one true friend, the golden man, who preferred exile with him to freedom with his people on Abrui. Yet he conceded to the old scientist's wishes, because he was able to appreciate what it meant for the old professor to have the chance to see at first hand the universe he had known only through the telescope.

There were five of us in the *Yodverl* when it headed away from Earth; Ubca-tor, Moura-weit, Urto, Uncle Ezra and myself. The ship, as you know, is readily piloted by a single man for once out of the confines of a world the controls are locked, the pilot only being necessary when the ship was passing through dangerous

*On Abrui is the lengend that Moura-weit was not born of flesh but was the offspring of a group of scientists who believed the foundation of Life is Thought and through their combined efforts had brought forth a child without the aid of flesh, endowing him with the power of their own brains. And because of his extraordinary powers the Abruians liked to think that Moura-weit was that child because of his seeming supernatural power of invention and preception. In speaking here, his wife may have intended to convey such a thought, but it is more likely that she was referring merely to the fact he was in truth a superman.

areas filled with meteorites or aerolites. At these times all three of the Abruians took their spells, Urto could manage the ship as well as Moura or Ubca.

When Richard Dorr freed the golden men of Moata from their slavery to the Tabora, Urto might have gone free, too, being a prince in his own name, but like Ubca, he had preferred exile with Moura. Both of them would have laid their lives down for him, if the need was ever to arise. Urto did try to save Moura when he fell on the planet, Kal, but though he died, he was unable to save his master.

As for myself I could not help but admire the man, Moura, even though I detested him for what he had almost done to my friends on Abrui. He was a handsome man judging from both Earth and Abrui standards, with an arresting personality that forced one to like him regardless of what he had done or failed to do. (Here Dana Gleason nodded affirmatively.) Later I was to know what it meant to love him far more intensely than I hated him, but that did not come immediately.

I had not wanted to go on this trip from Earth. I dreaded it, fearful of what could happen out there in space, but Uncle Ezra would have it no other way. He had told me I was free to stay home, but of course I would not allow him to go without me. He had been mother and father to me, the only person who belonged to me, in fact. He was an old man already when he had sent the rocket to Mars, and the years during which he awaited the message from Dana had aged him more than the years should have done. Now, I had the feeling that he was not to return to Earth alive.

CHAPTER II

Sunward!

YOU all know as much about the mechanics of the *Yodverl* as the Interplanetary Commission are willing for you to know, as much as I do, in fact, for I am not a scientist enough to understand it all fully. We do know that after years of study, Moura had discovered that each planet, each sun, tosses off vibratory impulses into space, vibrations that Moura carefully has plotted for us, and which the simple radium motors of the *Yodverl* are attuned to as a magnet is attuned to its lodestone and attracted to it as uerringly as the arrow goes to the bull's eye. Magnetic streams we call them.

Uncle Ezra had asked that first we visit Sol, as close as it was humanly possible to go, and Moura had set his intricate dials, allying his ship to the vibratory impulses of the sun. As yet there were no gravity nullifiers on the *Yodverl,* so the ship had to depend wholly upon the sun's attraction to draw us from Earth's bosom which, as Moura explained to us, was not entirely dependable as long as we were within Earth's blanket which tended to shut away much of the impulses. Consequently, our trip through the Earth's blanket was not overly pleasant, for we went in jerks and starts that threw us from our balance as Earth intervened continually, seeking to hold us to her. Once it seemed as if Earth should surely regain us as we went into a fall of several thousand feet, but Moura at the dials quickly switched them from the sun to the moon gleaming there in the night sky. The change steadied us, and the meters told us we were rising properly.

Moura suggested now that both Uncle and I retire to couches in the atol so that we should not suffer too intensely from space-sickness that would be brought upon us by the change from Earth's gravitational pull to a weightless condition. The Abruians were accustomed to these changes, but we would feel its full force. Uncle Ezra did not wish to leave the pilot room but I went docilely enough, and I was glad to hide my face in the cushions in the attempt to forget what was happening.

I must have fallen asleep for a while for when I became aware of my surroundings, I felt horribly sick, so sick that I wanted to die then and there. I could not open my eyes for the room would spin around and around. Then I had the sensation as though I had been strapped down with heavy bonds and could not move a muscle. This sensation persisted for a number of minutes, became certain reality, so again I essayed to open my eyes to peer about. The room was steadier this time, and sure enough I saw I was bound down to the couch with heavy straps, one across my chest, the other across the thighs. What could it mean? Frantically looking about, I saw on the couch near at hand that Uncle Ezra had been dealt with in the same manner.

Thoroughly frightened, I sought the answer. Had we been made prisoners in our sleep? But why? Were we not prisoners enough on this space-ship? Quaking with fear I did not know what I awaited. My vigil was not for long. Urto appeared in the doorway. He carried a tray on which he was holding two long rubber bladders and he was smiling.

In astonishment, I watched him approach, for never had I seen a man walk as he walked, strange, slow slithering walk, in which he did not raise his feet from the floor. He came in this fashion to the side of my couch, and I shrank away from him as far as my straps would allow, now certain that he must be drunk or out of his head, for he had taken one of his rubber bladders from his tray, which he had set down on the floor carefully, then held it toward my face. I started to struggle while he was saying something in a soothing voice. He spoke but a few words in English and those were unintelligible to me until later, when I had learned to understand him better. Now the situation was made more horrible, for I thought I was in the hands of a madman. While he sought to fasten the bladder over my mouth and nose, I strove to evade it by turning from side to side.

All the while he was seeking to soothe away my fears, to coerce me into submitting to his ministrations. I might have screamed, but so intent was my struggle, I never thought to use my voice and at last he succeeded in accomplishing what he wished. When the open mouth of the bladder was over my mouth and nose, there was nothing for me to do but to try to breathe, and in breathing, I was doing what he wanted me to do, I was taking into my lungs the contents of the bladder. It was a sweetish, clean odor that came to me; then the bladder was empty and I was choking for air. Quickly Urto removed it from my face and then busied himself in removing the straps that held me down. Immediately I was surprised at the feeling of well-being that filled me. All sickness was gone, and I felt as free and light as thistle-down. Sitting up suddenly I was shocked to find myself shooting from the couch straight into the center of the room and up until my head met the ceiling!

URTO seemed to have expected just such a movement on my part and I felt him grasp one of my feet as he pulled me down to the floor again. Standing shakily on my feet, I understood it all and began to laugh

—to laugh until the tears came. Urto laughed in comradely fashion with me. First he had strapped me down to the couch so I would not go floating off from it in my present weightless condition, then he had only sought to settle my stomach with the inhalation of the mixed gases in his rubber bag! And I, silly fool, had misunderstood it all!

At that moment Ubca-tor appeared in the doorway and came with a dragging walk towards us to inquire solicitously as to my condition. I told him how great I felt, and as Urto turned to minister to Uncle Ezra who had just opened his eyes, we watched the operation. The old professor showed no surprise at what was done to him, and then he was on his feet exclaiming at what a wondrous sensation it was to be without weight. Between the two of them, Ubca and Urto taught us the first rudiments of space-walking. We were very awkward at first, and more often than not had to reach for a support. Left alone, we might easily lose our equilibrium and go floating off to the ceiling, then to settle in the center of the chamber between floor and ceiling with nothing near to cling to. For the first few days the two of us kept the Abruians busy rescuing us. We had, instead, to learn to control our every movement, to walk slowly and not to make a too sharp turn or gesture. Later, we accomplished the feat of air-swimming, so that with flaying arms and legs we could push ourselves through the weightless air to some destination.

Presently, by taking our arms, Ubca and Urto led us to the pilot room where Moura awaited us. Looking through the clear glass of the pilot room I was nonplussed by what I saw. No one can picture that awful wonder of space, and when I saw Earth dwindled in size so that I could no longer make out the shape of its continents, I cried out in pain. There was the moon in quadrant slowly moving on its way beside Earth, growing smaller and smaller as we drew away. Later, as the distance grew greater, Earth commenced to become slightly luminous, and the wonder and beauty of the aurora with its glorious streams more than several thousand feet in height was an inspiring sight.

And now the sun was shining full upon us, so brightly it hurt the eyes to look at the great globe. Later, a black curtain had to be drawn around the walls of the pilot room, else the light and heat there would have become intolerable. In the living quarters it was better since the light shone through the walls above obliquely and we received only the afterglow. Of course, only the forepart of the ship was receiving the full blast of the sun, and the radium treated shell was gathering the energy to store away for further use or to redistribute so as to keep the ship at an even temperature throughout.

As you are aware, the energy from the sun does not actually come to us as heat. The waves merely carry the energy, which becomes heat only when it acts on or against a substance that is capable of translating it as such. A black rough surface does not reflect the heat and the waves will pass through a transparent object without warming or lighting it. And but for the fact that there were solids in our ship, we would have received neither heat nor light. As it was, the rear of the ship had none of this but felt the bitter cold and darkness of space so it required an intricate system of heating and refrigeration to keep the ship comfortable throughout its length at all times. However, as we drew nearer and nearer Sol less heat was needed and more frigeration was used instead, else we could not have stood the close approach to the sun.

Day after day slipped by as we neared Sol, and we were all filled with wonder at the great yellow body. Here was no atmosphere to refract the rays and it was possible to study the great sunspots by the hour, and to chart their courses, for this was a year of many magnetic storms on the star. Above and all around us were the distant stars of the galaxy, the Milky Way, the wondrous sash girdling the whole cosmos. The more brilliant stars, Sirius, Capella, Vega, Canopus, Alpha Centauri, Betelgeuse and others sparkled and shone like jewels, unblinkingly brilliant and glowing in all their natural colors of red, yellow, green, violet, orange, steel-blue and blue-white. Each constellation showed in all its perfect beauty and we could see clearly the component parts of a number of the doube stars or binaries. The clouds of the Milky Way were glorious formations, making bright the otherwise black night, making us feel just how small we of the almost insignificant planet Earth and of Abrui were. Here were the five of us daring the Infinite, sheltered by walls of glass, small atoms in the worlds of immensity.

Venus lay far to the right of us and we were barely able to make out Mercury against the splendor of the sun's corona, but soon Venus was passed by and gradually the diminutive Mercury detached himself from the limb of Sol to allow us to see him more clearly and to think what life would be on that hot-cold little world.

On leaving Earth, we were traveling at the leisurely rate of one hundred and fifty miles per second. Moura feared to travel any faster than that in approaching the sun for of course Sol's power is tremendous and once we were in his grip it was a question as to whether or not we could have pulled out. As it was, we never fully headed toward him, and upon coming within about twenty million miles or so of him we veered away and then commenced the journey around his great bulk using his emanations now as a brake against him. The journey around the star was short, and throughout the trip, the ship rocked as if in a heavy gale. The sight that met our eyes when we dared to look for a short space of time was a terrible one. After one or two glances through the mirror Moura had rigged up in the pilot room (it would have been impossible to look directly at the sun and keep our eyes intact) I gleaned most of my knowledge of that sight from the copious notes Uncle Ezra afterwards wrote. He had brought a number of note books as well as several astronomical instruments with him, with which he had busied himself during the entire trip, and for hours thereafter he did nothing but write upon his new discoveries of the sunspots, mighty prominences, chromosphere, reversing layer and photosphere.

As far as we knew, we were the first living beings to have ever approached so close to Sol. Perhaps others, from Mars or some of the moons of Jupiter or Saturn, had come before us, but here there were no monuments to man's achievements, and none to answer our questions. Had we not donned dark insulated clothing as well as the dark glasses, we could not have come through with a whole skin for now the glare was coming through the ceiling of the living quarters and the heat was at broiling point. When we withdrew from the sun's direct rays, we found our skins badly burned with all that, and for two days we were partially blinded. But

it was worth the experience to see the delight in the pale eyes of the old scientist.

CHAPTER III

SWINGING away from the sun now at a tangent, we headed for Mercury, which lay on an angle from us at about thirty million miles. Uncle was anxious to explore there and we all felt a need of a rest upon *terra firma* no matter how uninviting it might be. So far I have failed to mention some of the dangers we had to pass through in approaching Sol, dangers that would no longer be present. But that was before Moura had invented the meteorite deflector. In passing into the area surrounding Sol, we found on the entire trip there and outward to Mercury that every minute we were in danger of being struck by the space stones, free agents torn from stars or surging through space by themselves and caught in the grip of Sol. They came plunging toward him at terrific speeds to fall like pebbles into the burning heart of the great star.

A lookout had had to watch continually so we could dodge these 'stones,' two of which had been the size of small moons, but on turning in the direction of Mercury we ran into a swarm. Luckily there were no large ones in the mass, none measuring more than six feet or so in diameter with most of them from a few inches across to about one or two feet. Ubca who was at the controls dodged the larger fragments, and we could hear the smaller ones ofttimes impinging against the *Yodverl's* sides, but we did not worry about them for they could do no damage to our glass shell. However, we were glad when we passed the swarm.

I have already spoken slightly of the experience of a weightless condition and its inconvenience in moving about the ship, but that was really the least of our troubles once we had learned to adapt ourselves to the change. We had our humorous moments, too, and I had to laugh every time I attempted to sit in a chair for it actually took physical force to draw oneself down to the seat's level and hold oneself there.

All furniture was fastened to its place on the floor and thence straps were added so that once seated one could "stay put," for unless this precaution were taken after a moment or so the "seatee" might find himself floating away to the center of the room, there to retain the same position of sitting with the difference of not having the support of the chair. In sleeping, the same thing was applicable. One had to be strapped to the couch or else awake to find the couch several feet below, if he had happened to move in his sleep. I do not think that anyone (not even Moura, Ubca or Urto) can ever become entirely accustomed to the vagaries of living in the completeness of a weightless condition. I can't.

In the matter of controlling liquids, more difficulties arose. Liquids, as you know, take the form of a sphere when weightless, and are subject to their own forces of cohesion and surface tension and only striking a wetted surface will follow that and spread over it. For example, our weightless water in a partly filled bottle will not occupy the bottom but will leave the center empty as the liquid flows around the sides of the vessel. The most difficult thing, consequently, is to empty the bottle once it is filled. And naturally it is impossible to leave water in an open vessel for as more surface becomes wetted the water will spread out of its container, adhering to every new surface it encounters.

For this reason the water from the pool in the atol had been drawn off on leaving Earth's gravity, and the floor and walls had been thoroughly dried. It was Urto's business to look after this matter as well as to prepare our meals, and in this he was unusually ingenious. For instance, by using mechanical force, he was able to direct the water from the vats into rubber bladders that he kept for that purpose; then he would place the bladders in the refrigerator until the water was solid, so that it was possible to chip off the amount he needed, remelting it in smaller wide-necked rubber tubes or bottles. In cooking, he perforce used covered dishes entirely.

We, on the other hand, had to drink the water from these same rubber bottles by putting the mouth to our mouths and, by pushing or squeezing its end, force the liquid into our throats. If perchance the water escaped from the bottle, it would assume its spherical shape and to capture it again we had only to place a dish against it and allow it to spread over the dish; as else, we could walk up to it, grasp it with our lips and suck it into our mouths! Once it was in the mouth, we had to use the tongue to force it into the throat and there the mechanical action of the muscles of the throat, esophagus and stomach would do the rest.

In bathing ourselves, we had only to liberate a small sphere from one of the rubber bottles, dip our face and hands into it, then soap could be lathered on, more water added to rinse it and then all could be wiped away with a towel. The same was true in bathing the body, although we had to be careful to keep it from spreading to all parts of the room. For this we used a rubber bag that was fastened both to the floor and ceiling, and into which we enclosed both ourselves and the water. Only we had to be careful that the head did not become entirely submerged, else we would have drowned then and there!

So you can see that with all these difficulties we were gladdened over the prospect of descending upon the planet, Mercury, unenticing as it was!

MERCURY turns its axis once in each of its years and therefore presents one side to the sun at all times as it makes its single rotation about that star, a rotation of eighty-eight days. The surface facing the sun thereby attains a terrific degree of heat while its dark face equals the cold of eternal night, since its atmospheric blanket is too slight to carry any of the heat received on one side to the other. And in that portion of the globe where the light and dark meet is the one place where man can hope to put foot and survive. Here Ubca directed the ship.

Uncle Ezra was of the opinion he might find life here and he wanted to make his everlasting observations. Ubca discovered below us a fairly level piece of ground to which we made our way. Never have I seen a more gloomy, weird and gruesome landscape. The ground itself was lividly white in the glare of our lights, and here and there appeared small purplish growths of some sort. In that Uncle was right. He found life on Mercury, but only that simple specimen that was organic but hardly lifelike.

As we had drawn near we could feel the pull of Mercury's gravity, slight though it was compared to that of Earth. Its mass was but 0.22 against the 1.00 of Earth while its surface gravity was 0.31 instead of 1.00. Thus a body belonging to Earth loses over two-thirds of its

weight upon landing on the smaller planet, but that slight gravitational power was enough to hold water down to its level and we were to have the pleasure of seeing the pool fill up again. The water had more "buoyancy," as we may term it, than on Earth. A drop flung into the air went higher and did not fall so rapidly.

As soon as the *Yodverl* was safely landed, we all donned bathing suits and headed for the pool. The Abruians are great swimmers, spending much of their time in their pools, as you know, and it was a great inconvenience to Moura, Ubca and Urto to be deprived of their swims while in space. Uncle Ezra was for going outdoors immediately, but Moura forbade that. He recommended that for the next twelve hours at least we all take a complete rest, and since our eyes and bodies were sore from the treatment we had had from old Sol, Moura's suggestion was properly given. Even Uncle Ezra saw the wisdom of this and submitted gracefully, though all the while he was aching to be out exploring the gloomy terrain beyond the ship.

Urto had retired directly to his kitchen and shortly thereafter came forth bearing a tray of food, grinning broadly, because at last things placed down stayed down. So after our plunge, we ate our first "Mercurian" meal, able to drink water properly and not have to hold the food on our plates with the cutlery. A little later we all retired for the most refreshing and wholesome sleep we had had in a week. At Moura's suggestion, I rubbed myself down with his healing salve, so that when I awoke, all the soreness of the sunburn was gone.

On awakening we went for another swim. This time I went into the kitchen to help Urto. In the days past I had learned all of his culinary art and taught him some Earthly tricks of cookery and thereafter I shared a great deal of the work of keeping the ship in order, for I could not sit quietly with hands folded. Neither Moura nor Ubca were averse to giving Urto aid in his tasks as he sometimes shared the piloting of the ship with them. And he was a handy man in Moura's laboratory. In fact, except that he waited on us, there was never anything to show that he was the servant. The only way in which he actually differed from the others was that he knew scarcely a word of English, so it was difficult for me to converse with him, but as I had already taken up the study of Abruian for the want of something better to do, we were soon to overcome that handicap. All three Abruians were glad to teach me the words of their language.

At last, much to the relief of Uncle Ezra, Moura was ready to go with him to investigate the planet. I had no desire to go out into the desolate world nor had Ubca the inclination, but Urto elected to accompany the others. From the pilot room Ubca and I watched their progress through the twilight, where only their torch lights illuminated the way. The sun appeared as a great orange ball on the horizon, never seeming to change its position at all.

Going out to the airlock the three had donned the hermetically sealed suits that were used for outside wear and made them look all the world like deep sea divers. After dressing the air was pumped from the lock and a sample of Mercury's atmosphere taken. It was found too poor for human consumption, containing a very small percent of oxygen. Mercury's thin atmosphere is due to the fact that the little planet's surface gravity is insufficient to retain a very extensive envelope. Uncle Ezra was aware of this truth since he knew the albedo* of Mercury to be but 0.07, but he had wished to prove this for himself.

With this test completed, the outer door of the lock was opened and the three stepped upon the bleak world. We saw them go stumbling over the rough uneven ground, now and then stooping to study something on the ground. A stumble usually sent them flying several feet through the air before they landed ludicrously on some part of the anatomy not intended for such usage. But since their decreased weight sat so lightly upon them, they did not suffer a great deal from these falls. Moura and Urto were careful that the professor did not stumble overmuch, and when he did they managed to keep him on his feet.

THEY were gone more than two hours, disappearing almost completely into the darkness. When they returned, they were laden down with specimens they had collected, samples of rock and ores that proved rich in minerals. In the small area of no more than two miles circumference they had found iron, copper, tin, aluminum, platinum, uranium, not to mention commoner minerals such as those of sodium, calcium, magnesium and others. The next day they went farther and came back to report that Mercury was in truth a world rich in metal, a metallic world to be more exact. Moura predicted that in the future, men would come to Mercury for the sole purpose of gathering its wealth.

What proved the most interesting to the expedition, however, were the living speciments they had found. I have mentioned that on landing we had noted clumps of what seemed to be living matter. Uncle Ezra had examined this formation and in Moura's laboratory a more extensive investigation was made. The thing looked like a mushroom at first with a purple head with soft frilled edges that withered at the touch. The oddest part of it was the underbody, which appeared to be a root but was instead more like a snake, or rather a worm. And even now, after it had been uprooted, it wiggled slowly, and tried to move out of the reach of prying fingers. I had cried out in horror when I saw that happen. "What is it?" I asked.

Uncle Ezra chuckled. "I am not enough of a naturalist to say for sure, Elsie, but I know I can make a guess. I think this thing is a zoophyte or in other words a plant-animal, a compound creature! You have read Darwin's 'Voyage of the Beagle' and you may recall his mention of compound animals, corrallines, creatures with worm-like bodies and plant-like heads able to move about and produce eggs. See, here you can make out the deposits of eggs under these frills of the head, and if you look closely you will see some of the eggs that have developed into individual polyps, still adhering to the parent. They will do so until full grown. It's a far cry from the Argentine swamp to Mercurian desert, and what is most strange about the organism is that it lives in a bed of metal ore in which there is neither food nor water!"

Moura bent closer to examine the weird thing that wiggled again at his touch. "Poor thing," be observed. "How tenaciously it has clung to its little bit of life. This is possibly all that's left of this dead world. But now we shall give it a name for so valiantly surviving

*The albedo of a body is the ratio of light which it reflects to that which it receives. The amount reflected depending to a considerable extent upon whether or not the body is surrounded with a cloud-filled atmosphere. A surface having little or no atmosphere, consequently, has a low albedo.

the ages. Allow me to present the Rollinsphyte!" The last was said in a jocose strain, but I saw Uncle Ezra enjoyed the thought that he was the discoverer of a life that was to bear his name.

We left him studying his find and went for a swim. We stayed on Mercury a week before he could be prevailed upon to leave and all the while his mind was upon his Rollinsphyte. "I can't figure out," he had said, "how it subsists on such a meagre fare, nor what the poor thing does at such periods when the sun shines on this portion of the globe. Such heat must surely kill it or, if it manages to survive, how does it live when the Outside Cold comes in?"

"Why uncle," I exclaimed, "I thought Mercury does not make but a single revolution during the year."

"Of course."

"Then how—what do you meant?"

"My child," began the professor in that slow drawling way he had of explaining his science to me, "surely you are aware that whatever Mercury's period of rotation is, its rate of rotation must essentially be uniform. And since it moves in its orbit so as to fulfill the laws of areas, its motion of revolution is sometimes faster and sometimes slower than average. The result is that the same side is not always exactly facing the sun. Thus sometimes it is 23.7 degrees ahead of its mean position in its orbit and sometimes that much behind, so that at such times the sun shines 23.7 degrees beyond where it ordinarily should shine. That is how it happens that in these two portions of the planet wherein twilight usually lies the sun actually does shine during the libration period. Once yearly, therefore, this part of the globe receives direct sunlight, just as once again the dark and cold of Space come through.

"How then does this little creature survive those two intense periods? See, it is withering here in the light of the room!"

I shook my head, but Ubca who had become an interested spectator, spoke up, "Perhaps, sir, that is the reason for the worm-like appendage which allows the fellow to migrate each season and so stay within the confines of the twilight!"

Uncle Ezra clapped his hands together in delight. "Of course, how stupid of me not to consider just such a possibility. And now, if you will be so good as to help me, we shall see by what process it absorbs its unusual fare. Here is a specimen I took from. . . ."

At that juncture I left them, not anxious to watch the ugly little zoophyte any longer.

I was glad when we left Mercury behind and headed for the lovely blue-white world of Venus. It lay but 31,200,000 miles away and traveling now at the rate of five hundred miles per second it took us a little more than seventeen hours to reach there. On the way we again encountered a shower of meteorites and although they could do little damage, Moura at the controls steered out of their way, though occasionally we heard the impact as the smaller ones struck our sides. In fact, as we moved onward, our vision almost became obstructed by the smaller particles that adhered to the ship.

Moura explained to me that, in moving through space, we created a small attraction for any matter smaller than ourselves, much the same way as the planets attracted us to them, and in this case, farther away from the sun, they clustered about us since our attraction was more immediate than was that of Sol. However, as soon as we came into physical contact with Venus, she in turn attracted them from us, the missiles dropping upon her own broad bosom, freeing us from the discomfiture they gave us. Then we sighted a small crack in the outer glass on our port side, but so sturdy is the glass of Abrui that little damage was done, and the small crack need not be mended until we landed. Moura believed the crack due to a flaw in the glass itself but he was not worried, since the crack could go no deeper than the six inches of its layer, and there were thirty-nine more layers below it. Even were one layer of glass peeled away, it would make no difference to the *Yodverl.*

CHAPTER IV

Power of the Mind

NOW we were slipping into the mists of Venus, those grey-white clouds that hide the face of the world from the peeping Toms of the Universe. For what seemed hours we slid on a thirty-degree angle toward the planet moving no faster than two hundred miles an hour, and we all but plunged into the green tumbling waters of the great ocean of Venus over which the cloud banks swirled before we realized its being. Ubca had taken the controls and only his quick action saved us from a bath in the sea. Then he brought the ship to a stationary position no more than fifty feet above the water, and stare as we did, our eyes could not pierce the mist to tell what lay beyond. They rose from the water in long feathery tentacles and made the scene one of an eery ghostlike beauty. Above us we could see the gleam of the sun among the clouds painting them in a variety of wild colors, the clouds acting as a multitude of prisms and diffraction elements on the sunlight broke it up into the seven hues of our sunsets. Not thirty yards away the sun had found a rift through which it shone down upon the water turning it into a sheet of gold.

It was here for the first time that I learned something of the full power of the Abruian mind. Staring about us into that partly illuminated world, I grew impatient to see land or at least something more tangible than clouds, sun and water, and I wondered at the sudden lethargy that had come over the three men in the pilot room.

Ubca had brought the ship to a standstill and now sat quietly in one of the metal chairs, half reclining without saying a word, his eyes fastened upon the single beam of sunlight as if he had not a care in the world. Uncle Ezra paid no heed to anyone, his eyes darting here and there, making his endless observations. Soon he would have something to tell us about the phenomenon of the ever present clouds of Venus. Never, on the whole trip, had he questioned anything he saw or had he grown impatient when time grew heavy. He was a child, with mouth agape, waiting for each new wonder to present itself for him to put down in his notebooks. Him I could look to for explanations of natural phenomenon, but he would never have bothered to inquire into the vagaries of the human mind. But it was Moura-weit's attitude that struck me as being the strangest of all.

One would have thought this a time for action, but instead he was standing in the forepart of the room, hands dropped listlessly at his side, eyes turned toward the water without seeing it. He might have been con-

sidering everything but the matter at hand. Yet for all his passiveness, and that of Ubca's too, I felt a tension in the air. I wanted to laugh, to scream, to wring my hands. But for what? What was the matter with both of them? Was this the way Venus treated men? Enfolding them in a state of suspended animation, sapping them of all desire for movement? Why, then, was I not affected so? I even looked about fearfully, afraid that some ghouls might be approaching to take control of the ship. Then, after what had seemed hours, Moura-weit spoke.

"Land lies to the northward, tor, and 'they' are friendly," were his queer words. Ubca looked up from his staring, not at all surprised at the message. Immediately he was upon his feet, working at the levers and twisting the dials. In navigating through a planet's gravitational control the motors repelled the magnetic vibratory impulses instead of attracting them. Studying the compass, he found it already responded to Venus' magnetic poles. Moura turned and left the pilot room, pausing a moment to say to Uncle Ezra, "Come, professor, I have something of interest to show you."

Left alone with Ubca, I hesitated before speaking, and I had to force my voice from my throat. "Tell me —what does this mean, tor? How can *he* know where land lies? Only this morning you said you'd never been to Venus before."

Ubca, looking up from his instruments, gave me a searching look with his lavender eyes. Then he grinned broadly. "You appear to forget, Miss Rollins, the power that lies in the mind of Sa Dak*. Perhaps you have forgotten, or else never realized, that the Abruian mind is all-powerful, that the brains of all men are open to it. And Sa Dak has one of the most powerful minds ever known on Abrui! Nothing seems beyond the power of that tremendous brain!

"Why, then, with such a mind, should we be surprised that he is able to seek out the minds of those dwelling on this world, learn what there is to know of them, converse with them through the medium of the brain? I have seen it happen before—on one of the Saturnian moons. Only those people were unfriendly and we did not descend there, for we wished no trouble. No doubt, Sa Dak has already advised these Buians, or Venerians as you would call them, that we are coming, and they look for our arrival! Else, if they are not too civilized, they will believe one of their number has had a vision and think we are god-things!"

Slowly I nodded my head to what Ubca-tor had told me, unable to voice an opinion. It was all too hard for me to believe, to understand. True, I had forgotten that Moura had told us of the mental telepathic powers of his race but that somehow had left no impression upon me. Now timidly I asked. "Is—is my brain open to Moura's mind—and yours, too?"

Ubca nodded. "All of Abrui have that *faculty,* even the Gors. But Sa Dak goes beyond that—he knows more than you could realize, what you will do under certain circumstances before you yourself are aware of the trend of your thoughts, since his mind moves so much more quickly than yours—or mine. It as though he had a finger on the pulse!"

YOU can imagine my reaction to that discovery. I had now to realize that my brain had been as an open book to these strange men! No privacy of mind whatsoever! Blushing under Ubca's smiling eyes, I excused myself to run in retreat to the little cell-like room that was my own chamber, there to sit thinking of what I had learned. I felt both anger and fright, and wanted never to see any more of the Taborans. No woman can be happy in the thought that a man knows what passes through her mind, the very idea of such a thing tortured me, embarrassed me. I believed I could never face any of them again. Yet, strangely enough I did not resent Ubca-tor half so badly as I did Moura-weit.

Ubca I had found was a gentle person and although it appeared to me that he held himself somewhat aloof from Uncle and myself I had recognized the fact that he was of a self-effacing nature. So it was upon his leader that I vented my spleen, considering him at fault for not reminding me that my every thought was readable to him, for him to smile at perhaps.

Heretofore, I had felt that I disliked Moura, merely for the man he had been. During the two weeks on the *Yodverl,* it is true, I found no occasion in which to exercise my dislike, and in that time I had actually forgotten the thought that I had disliked him. Instead, I had been learning to admire him, to appreciate his kindly attitude to us, his consideration and his attentiveness, for first of all Moura was a gentleman. I had never before known a man of such force or greatness of mind, and I knew him for a genius. He seemed to me able to conquer anything. I remembered now, that during those long hours aboard the spaceflyer, I had even indulged myself in girlish dreams, wondering if it were possible for me, insipid person that I was, to inspire admiration in such a man as Moura-weit. One can not dwell in close quarters with one they think they hate and resist such thoughts, especially when that one is a handsome, virile man capable of bringing such thoughts to a woman. And what a ninny he must have found me to be, allowing me to live in my fool's paradise, while I was unaware that he knew everyone of my worthless thoughts! How that galled me.

He had been kindly enough through the long days, playing the perfect host, looking out for my comforts, explaining this and that, but beyond it all there were no other contacts between us. Perhaps I had resented that more than anything else! And now I could only think of the counts I had against him, his villaincy toward Dana and Dick, and his world, his carrying Uncle Ezra off from Earth, bringing that delicate soul closer to his death by the strain and excitement this trip was exercising on him. And here he had been making a fool of me, allowing me to believe my intimate thoughts safely locked in my own bosom!

For the next two hours I kept to my room, not venturing forth for fear of meeting the creature of my hate, wondering at the same time if the walls kept my thoughts safe, and knowing they did not. But then I grew sensible and realized that he could have no interest in me as I dared suppose; that a plain colorless female like myself had little place in his own thoughts. And yet how miserable such a thought made me, too. Can anyone explain the intricacies of a woman's mind? I am certain that not even Moura could do that.

Imagine then my wonder and chagrin when a knock came at my door and there stood Moura. "We are coming into the sight of land, Miss Rollins," he said kindly, "Won't you join us?"

I could not answer but walked past him and into the

*Sa Dak, master in Abruian. Ubca-tor always referred to Moura so.

pilot room and he did not speak again, but I knew he *had* known my thoughts, that he *had* been interested in what passed through my mind, and his coming at that moment was his way of retribution for the terror he had caused me. He could have dispatched either Ubca-tor or Urto instead.

CHAPTER V

Venus

FROM the pilot room I saw that a green world lay below, a broad savannah in which a river wended its way, behind was the ocean we had just crossed. Moura took control of the ship and as though recognizing a landmark veered the ship so that we followed the river's course as it meandered through the lowlands. On either side the grass stretched as far as the eye could see, and I was surprised to notice that the clouds had lifted and were no closer to the ground than about three thousand feet or so. We were flying half way between the ground and that ceiling.

It was not long, however, before we caught sight of a city far ahead, lying in a bowl of low hills, and Moura left the river that made a wide circle through the meadows, and he headed directly for the city itself. It was a thing of beauty, with tall fairy-like spires rising high into the greyish clouded sky, every color of the rainbow and more, but the pastel shades instead of the clear-cut hues of the spectrum. As we drew closer we could see that wide avenues and squares were set in between the tremendous buildings and were filled with a mass of beings, but from the height at which we flew, we could not as yet make out their forms clearly.

Now we hovered over the tallest building, which was an azure blue, tall and slender, with the delicate spires like arms reaching outward, arms that seemed a gesture of a people who were still seeking the truths, seeking to encompass the heavens. Yet, as we drew nearer, I saw that for all its etherealness the building was substantial, and even ponderous, expressing great power—a power that was beautiful because of its strength. Below were faces upturned to us and slowly, majestically, Moura brought his ship about and gently we began to drop Venusward on an even keel.

As we dropped toward the great square before the azure building it miraculously cleared itself of its people, but I had to wonder at Moura in so trustfully placing his ship and ourselves at their mercy. How completely he must have understood the race in that silent communion of his! He did not hesitate a moment during the descent, even though we were all struck by the viciousness of the creatures below as we dropped to their level. And what creatures they were.

Twenty feet tall they stood with great ungainly bodies —night-marish manifestations so in variance with the beauty of their thoughts and their city. First our ship came to the level of their faces (we had to call those hideous livid white expanses with the long elephantine noses and square, staring lidless eyes a face) but never had Earthly eyes seen such monsters. The eyes set in the faces, four feet long and three across, were as large as saucers and each nose almost a yard and a half in length had what appeared to be a row of small fingers at the tip. There was no visible mouth and the ears were enormous things of flapping flesh. Then came the neck, two feet in length, flexible and boneless, upholding the broad long head and ending in shoulders but three feet wide. The rest of the body was pear shaped, a bulbous thing of gray-green flesh. From the inedquate shoulders dangled two small weak arms, flexible like the trunk, and having a row of small, delicate tapering fingers at their ends. The body was upright, until it reached the hips, where the pearshape doubled its girth and there were two pair of heavy round legs, the forelegs several feet longer than the hind ones, the latter being so bent at the knees it made one wonder how they walked. The feet themselves were circular pads that hit the ground with a resounding smack.

I think that even Moura, with all his composure, was shocked by the sight of these horrors, but he showed no outward sign as he brought his ship to the ground. Still his eyes did glitter strangely, and his lips were drawn tightly around his teeeth. Of us all I think Uncle Ezra was the calmest. In these beasts he merely saw a new type of biological expression, and all the while he kept exclaiming at the awfulness of them, trying to class them to Earthly standards. Nothing could be too strange for him anymore. Ubca-tor was downright frightened. and I felt a kinship to him for it. Only Moura and Urto were able to hide most of their emotions.

UBCA was the first to speak, but his words were unintelligible to me for he spoke in Abruian, remembering only his mother tongue in his fear. Moura, always thoughtful, answered him in English so I could understand.

"There is nothing to fear, tor," he told Ubca. "True, they are atrocities in our eyes, but in communicating with them I met a great mind that readily comprehended what we were and why we were here, and he knew immediately how to adjust his mind so that we could communicate. He was of a benign personality, and I could find nothing of violence or treachery in his make-up. He told me he was expressing the attitude of his whole race when he invited us to visit this city and guided us the whole way. You must not judge these creatures by their outward aspect, nature does not consider appearance when she creates. . . . See . . . they are clearing the way for the entrance of a personage. Come—we must go to meet—our friend."

At Moura's words we looked out into the square, and saw that the multitude of legs (which were alone in our direct line of vision) were moving aside and clearing a broad path down which another of their kind was approaching. He was perhaps more gigantic, more hideous than his fellows. We followed Moura into the anteroom of our ship and he went over to touch the lever that would open the heavy door, when Ubca laid a hand on his arm.

"You have not yet tested the air, Sa Dak, how know you that it is livable?"

Never impatient, Moura smiled broadly. "I know already what the atmosphere's constituents are, tor. Our friend out there informed me hours ago!"

Ubca shrugged his shoulders sadly as if he believed Moura had surely lost his mind, but when we felt the rush of warm, fresh vapor-filled air that came with the opening of the doorway, we knew that "our friend" had not erred. And how good the sweet air, laden with moisture, was to us! There was perhaps in a slight degree more oxygen in the Venerian atmosphere, but not enough to distress us. Instead it gave an added feeling of well-being to our bodies.

Moura stood hesitating a moment in the doorway before going to meet the monstrosity that had now come to a halt fifty feet from the *Yodverl*. Turning to us, Moura suggested that after all we remain on the ship, while he went alone. Gladly I acquiesced, for I had no wish for closer proximity to those creatures. Yet I could not help but fear for Moura. Ubca had expected to accompany him, but so accustomed was he to taking the other's orders that without question he stayed behind. He surprised me by flinging me a look that I did not define immediately, but from then on we were joined in a fellowship.

We had a common fear between us for our leader. Later, as new events shaped themselves, that brotherhood of ours became a strong bond.

Almost sadly we watched the meeting of the two—the handsome silver man of Abrui and the monster of Venus. They came to a halt about ten feet apart and to my wonder nothing happened, but after they had stood in that manner for fifteen minutes or so I realized they were conversing through the medium of the brain. Then came a movement from the beast as he lifted his long nose or trunk and emitted a wholly unhuman shriek which continued a minute or so, rising and falling in volume, so that we were led to believe it was a form of speech. When the cry ended, the creature with Moura at his heels, turned and headed for the azure building on the right side of the square.

The two disappeared into the building while we feared and wondered.

Thereupon the great square was slowly deserted by the Venerians, and soon not a single living soul could be seen about. We could only continue to stare at the place wherein Moura had disappeared. Ubca called my attention to the sky above and we were treated to a scene so beautifully weird that there was pain in it. The sun was dropping low beyond the cloud bands and obliquely its rays fell upon the masses of vapor, throwing one color after another in awful affray before us, flashing back and forth through the moving mists, until our minds were stunned by the vivid changes. Then, slowly, it all faded and the night fell and utter blackness engulfed us.

Now the light of the *Yodverl's* glass walls fell upon us dispensing the store of the sun's energy that had been gathered during the period we had stayed out in Space, and shone on us gently without the glare that an incandescent light gives forth. Urto came to tell us that we had time for a dip in the pool before our evening meal was ready. Upset because Moura had left him behind, Ubca appeared distracted, but force of habit made him get into his swimming togs and join me in the pool while Uncle Ezra preferred to linger in the open to stare at the darkness round about.

We swam in the water without spirit. Ubca was fearful for his beloved friend; I was fearful of what might happen if the Venerians should in turn become hostile. Yet I, too, felt a strange loss that was occasioned by Moura's absence. It was as if his departure had taken the color out of our beings, and we waited only for his return to regain the vitality his going had drained from us. I did not realize then how strongly his personality had already reacted upon me, how miserable I was to become when he was not about even for a short space of time.

But I must go on with my story.

CHAPTER VI

A Lesson in Mind Telepathy

AFTER eating our supper, Uncle Ezra again left Ubca and me to ourselves. All this time I had been trying to recall all I had learned of the Abruians, and now timidly I put my question to Ubcator. "What is this power of your people that they read the mind so easily, tor?"

Ubca answered gravely enough, as though he did not know already what lay behind my question. "It is a difficult thing to explain, Miss Rollins, but first must you comprehend that everything, be it chemical, mineral, organic or inorganic, is built up basically from vibration. Everything is a matter of vibration. Without it we could not have the atom, the molecule or the star. The smallest bit of matter or the largest, all pulse with this being. And if it was not for this natural phenomenon, we could not ourselves live. Our sensations are a matter of vibration; we see, hear and we feel—all because of this.

"A good example of it is given by your machines that broadcast sound. Through space the sound is distributed upon 'wave lengths' of different frequencies so that you might hear them. Yet though the waves are there, ordinarily your ears can not hear them, can not pick them up for you, without the medium of a certain mechanical receiver. The same is true of television. It is the same thing, you can not see the objects broadcast unless the machine to gather them and translate them for you is there.

"Now we might say that the brain resembles radio transcription to some degree. First the vibratory impulses must be broadcast from some central station before your receiver can 'pick them up' and in the same way the objects around you must broadcast themselves in the varying degrees of wave-lengths before you can either see, hear, feel or smell their odors; your brain is therefore likened to your radio receiver, but for you to catch the impressions made on the brain of another is as impossible as for you to try to listen to radio without a machine.

"You of Earth know that the various members of the body broadcast their wants and hurts to the brain. Even now our scientists of Abrui seek to discover the 'wave-length' used by these organs. When that is discovered, medical science will take a great stride forward. We do know, however, that as with all animate or inanimate articles the brain is one, for first the brain is composed of chemicals, the same chemicals that compose the divers solids around about us. The difference, however, lies in the fact that the brain is a more highly sensitized plate. We might compare it to the difference between a molecule of water and the great ball of a star. The water contains only three parts of two different elements. A star contains all the elements nature has devised—hundreds and thousands of different combinations to be had held together in that one great mass. And so it is with the brain; it is composed of many thousands of cells, each cell apart from the other, doing its individual work, but on the whole contributing its powers to the common center.

"And the main duty of your brain is to translate to your consciousness the needs of the entire body, just as your radio instrument translates to you the waves

that come from out of the ether. You believe that you 'pick up' your brain impulses the moment they are formed by that wonderful mechanism of your body; that you 'receive' them as quickly as they are made, but this is not true. Let us suppose that you are filled with an emotion. It sweeps through the body, it causes the heart to contract, the blood rushes to the head, the hands grow cold, they perspire. Can you translate this emotion immediately, can you place it, understand it? No. First you must consider it, you must ask your brain what it means, then the brain tells you . . . it is love, it is hate, it is fear. This, then, is one of the first functions of the brain—to translate into words for you the impressions received, whether it is hunger, thirst, weariness, disgust or sorrow. The very beauty of your emotions, the color of your hates, the longing of your desires are all unintelligible, incomprehensible to you, until the brain gathers these impressions, mixes them for you and translates them just as your radio set gathers, mixes and translates sounds for you. You understand me?"

I nodded, "I think so."

"Good! And now perhaps you can understand just what the Abruian mind does, for it also is a receiver to gather from your brain your impressions, and just as you yourself translate these things for yourself, so does the Abruian accept the abstract and translate it for himself. This is telepathy. It is evident to us that our remote ancestors learned this method of communicating with each other before they had speech, and their descendants are born with the faculty of gathering each other's brain impulses.

"It does not matter to me what language you speak, for on receiving your thoughts, I receive them in the abstract and my own brain unconsciously does the work of translating them into understandable words for me. However, in the matter of grasping these brain impulses of yours, my brain has first to be attuned to the same wave-length that yours makes use of. Each brain uses a different wave-length, varying as much as the finger prints of the race vary, and only for one aware of this science it takes but a moment's hesitation to 'feel' out and adjust his brain to another's. Once the frequency on which a particular brain broadcasts is known, the other can 'hear' what passes through that brain."

For several moments I sat in thought before speaking. "It sounds highly technical, but still I do not grasp how you are able to 'hear' as you say, what passes through my mind, especially since the impulses are of so low a frequency."

"That is a matter I hardly try to understand myself, although I employ it all the time. Moura-weit could tell you better than I, but as I have said, it is a science inherited by us from our thousands of generations, and is, in a sense, as familiar to us as our other five senses."

"I see—but I wonder if it were possible for one not born of your planet to learn the system?"

"Perhaps Sa Dak could teach you, Miss Rollins. I am not a very capable teacher. The construction of your brain differs from ours, and though I can gather your thoughts, I do not know that I could teach you to read mine."

"Do you think him incapable of nothing whatsoever, Ubca-tor?" I demanded.

The tor grinned affably. "When I find something he can not accomplish, I will say, yes, but until then . . . I concede Moura-weit master of everything he does!"

I HAD no answer for that and since I did not wish to dwell upon Moura-weit's powers, I brought the conversation back to what was uppermost in my mind. "Isn't it possible for one to keep another from reading his thoughts?"

"Oh, yes," he said, "that is as everyday a thing as reading the other's mind, for it would be insufferable to have your mind always open to others. Yet, again, Sa Dak is the one man against whom it is difficult to close the brain. I no longer attempt it, and my mind is always accessible to him."

"But could you not teach me how to do it?"

"I can try to help you if you wish it."

"Do so right away!" I cried.

He shook his head. "It can not be learned in an hour or a day, Miss Rollins, but perhaps if you train yourself constantly in time you may learn the secret."

That was discouraging, but with youth's intrepidity I thought I might accomplish the trick in short order, and I needed it right away. "What must I do?" I asked.

"First you must learn the power of utter concentration. You must make your mind so pliant and flexible that you may carry a thought with you hour after hour, day after day so that no matter what else occupies your mind you can not lose it. I understand that few Earthlings know what true concentration means."

"How is it done?"

"Well, let us take—this flower," and Ubca stooped and plucked a delicate bloom that was growing in the pots around the pool. "You will note the shape of the flower, the shape of its white heart, its violet-black petals. You see the veins in the petals, the contour of its sheaf, the size and design of each individual part. You breathe in its perfume, you know its odor, but can you carry the thought of it around with you throughout your day? Will its color tint the rest of our thoughts? Will its delicate perfume stay with you above the odor of all other things your sense encounters? Can you carry the thought of it in your dreams, and recall it vividly even weeks later after this blossom is dead and gone? Can you remember its every detail so accurately that you can draw it upon paper months later and not miss a slightest vein? If you can do that, Miss Rollins, then you can make your brain pliant and flexible enough so that you are prepared for the next lesson to come."

Taking the little flower from his fingers I looked at it, twirled it about and stared at it in wonder, seeing the difficulty of the task. I said nothing more about it, but when I again had leisure, I commenced to learn this new science. Yet it took many months and many flowers to accomplish that first step.

Now, as I sat considering all this, an interruption came in the form of Urto, who rushed into the room in a state of fright. "Tee Poofossee," he was crying, "Tee Proofossee."

We were both on our feet immediately. I ran from the room without stopping to learn the trouble, but Ubca-tor was wise enough to question the golden man as to what was wrong. I had run directly to the laboratory but not finding him there, was on my way to the pilot room when Ubca caught up with me. "Your uncle has gone outside and Urto can not find him in the darkness. Come, we had better search. Urto will wait here if he returns and give us a signal." He stopped in the anteroom to pick up a torchlight and then we ran out into the night calling Uncle's name.

END OF PART I

Cosmic Power

By John C. Dare

BELOW the surface of this short story lies a good lesson. More than ever, now, in these days of financial depression and trusts and monopolies, we are likely to lend a very willing ear to authorities in the various fields of science. Unfortunately, to make as sweeping an improvement as is made in "Cosmic Power," the scientist must be imbued with an almost unnaturally strong incentive. And our hero is. And perhaps some enterprising young person, with thus far unexplored inventive potentialities, will derive some beneficial ideas from this tale. It is not impossible.

Illustrated by MOREY

"GENTLEMEN we are sunk—scuttled—on the rocks. Read that."

The above concise and very slangy statement was made in a bitter tone, as John Cherron finished reading the message he had just received and passed it to the man on his right.

The four men present formed the Board of Directors of the International Food Products, Inc.

High in the tower, on the roof of the Food Products Building, the Directors sat, smoking gloomily. As the message passed from hand to hand, each face grew more gloomy still.

The year was two thousand. To get the situation well in mind, it is necessary to explain the advancement made in electrical developments. Gasoline-driven cars and planes were practically obsolete. Here and there an occasional one might be found driven by gas. Since the perfection of wireless transmission of electrical energy, most of them had gone to the scrap heap.

All food was made synthetically, planes and giant air liners were electrically driven. Factories and all forms of ground transportation—in fact everything necessary to human existence—had come to depend on electricity to such an extent, that the huge sign on top of the Power Trust Building had begun to assume a sinister significance.

The sign read: "Power is Life."

The sinister meaning of the sign had just been called to the attention of the members of the Food Board.

The message read in effect:

"We have been empowered, by the International Power Commission, to raise all power rates twenty-five per cent. You are hereby notified that on and after the thirty-first instant, the new power schedule will be in effect.

"P. G. Wilson, Pres.
"Per C. E. Canto, Sec. Power Trust."

As far back as the year nineteen hundred, the public had from time to time received warning against what, at the time, had been termed Giant Power. Even then, this forerunner of the Power Trust had been quietly gaining control of the sources of electrical energy. All the water power sites, in the western part of the United States, were rumored to be under their control even at that early date. As new sources of energy were discovered, they were acquired, sometimes by purchase, sometimes by means that were questionable. Their slogan had been results, and results they had accumulated until now, at the end of the twentieth century, they not only controlled all sources of electrical energy, but through that power, controlled almost everything else. They dictated the policies of the different governments, told the preachers what to preach, the schools what to teach, to such a degree that the civilized world was fast becoming a subsidiary of *Power*, and Power meant P. G. Wilson.

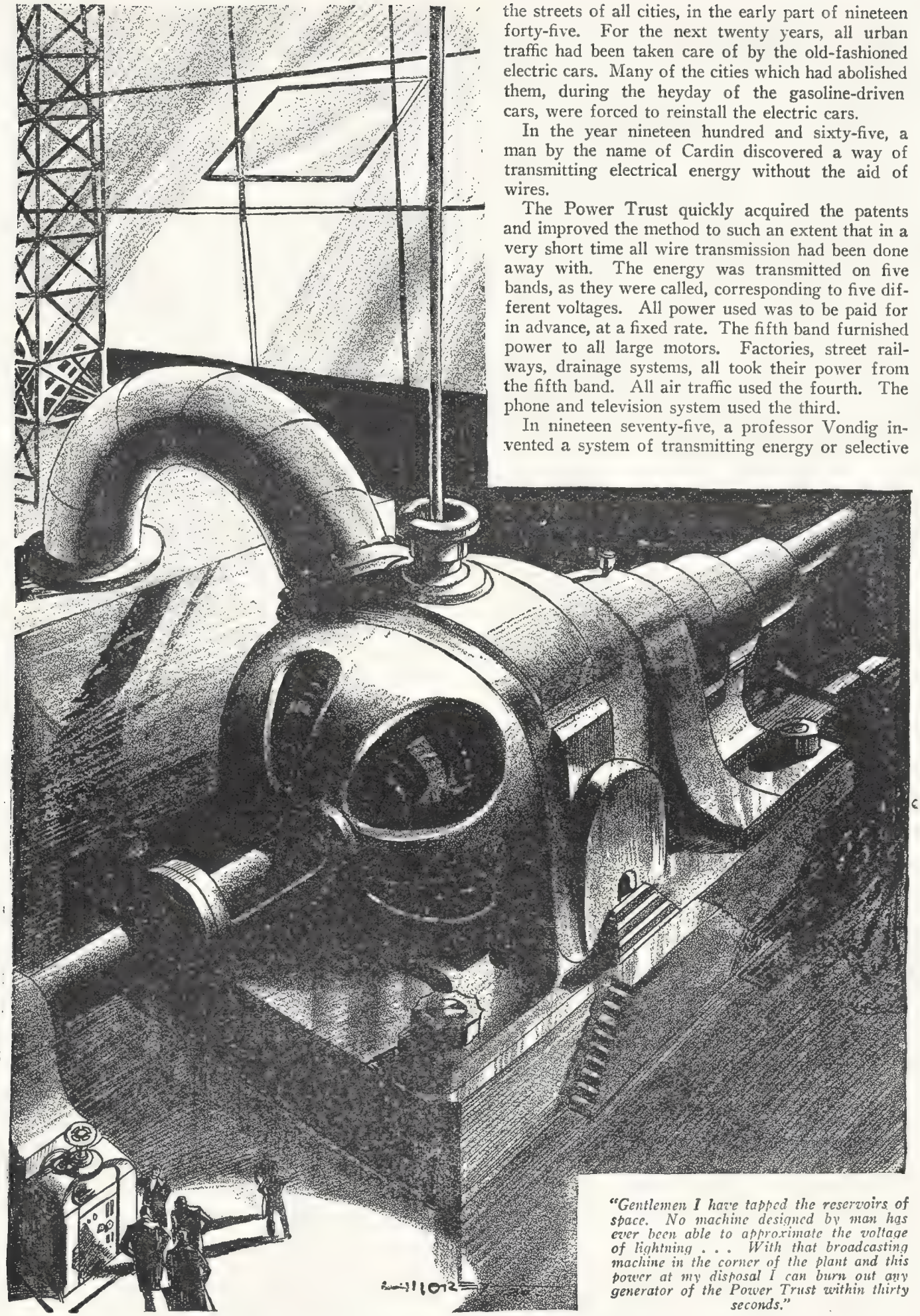
Because of the prevalence of carbon monoxide gas poisoning, gasoline-driven vehicles had been banned from

the streets of all cities, in the early part of nineteen forty-five. For the next twenty years, all urban traffic had been taken care of by the old-fashioned electric cars. Many of the cities which had abolished them, during the heyday of the gasoline-driven cars, were forced to reinstall the electric cars.

In the year nineteen hundred and sixty-five, a man by the name of Cardin discovered a way of transmitting electrical energy without the aid of wires.

The Power Trust quickly acquired the patents and improved the method to such an extent that in a very short time all wire transmission had been done away with. The energy was transmitted on five bands, as they were called, corresponding to five different voltages. All power used was to be paid for in advance, at a fixed rate. The fifth band furnished power to all large motors. Factories, street railways, drainage systems, all took their power from the fifth band. All air traffic used the fourth. The phone and television system used the third.

In nineteen seventy-five, a professor Vondig invented a system of transmitting energy or selective



"Gentlemen I have tapped the reservoirs of space. No machine designed by man has ever been able to approximate the voltage of lightning . . . With that broadcasting machine in the corner of the plant and this power at my disposal I can burn out any generator of the Power Trust within thirty seconds."

waves in the different bands, and a controlling system, whereby each particular motor used its own selected ray. The amount used could be metered, and the power turned off, if not paid for. In the case of planes and motor cars, each vehicle could be kept track of at all times by an indicator in the selective control room. The indicator was in the form of a tiny red dot, moving over the face of a small map. The indicator was automatic. When the vehicle started, the dot traced its course on the map.

"Gentlemen," Cherron repeated, "that finishes us. Doing business as we are, on a bare ten per cent margin, an increase of twenty-five per cent in power rates—well it doesn't take an expert to figure that out."

"Let's take the matter up with the Commission," said Strom, one of the Board members, "we can show a bare ten per cent profit. We'll take it up to the Supreme Tribunal, if necessary."

Cherron laughed bitterly.

Leaning forward, he said impressively, "Strom, don't act like a child. Where's your brain, man? What happened to Turbo Motors, Inc., and Steel Products Ltd.? My God! Can you men see it? That devil Wilson owns the courts, owns the Commission, and means to own the whole damned earth.

"It's all clear at last," he continued. "Ever since his ancestor gained control of Giant Power, the Wilson family have been working toward that end."

Cherron was on his feet now, pacing back and forth.

"The tides have been harnessed, all coal and oil deposits, every single source of power is owned or controlled by Wilson, and to what end? I tell you, Gentlemen, there can be but one object—and that is the Dictatorship of the Planet."

BU-R-R-R-R.

"Answer the phone, please, Strom," said Cherron.

"Someone wants to talk to you, Jack," said Strom.

"Who is it?" asked Cherron. "Oh, tell him we are in conference and can't be bothered," he added.

Strom snapped on the television and motioned for Jack to look.

"Ever see him before?" he whispered.

The television showed a rather shabbily dressed old gentleman with long grey whiskers, and a diffident manner. Short, stocky and broad-shouldered, he waited patiently for Cherron to answer the phone, as he slowly puffed a cigar. The old gentleman suddenly turned on his own television. He saw Cherron and spoke before Jack could dodge out of view.

"Mr. Cherron," he said in a deep voice, "I have something very important to discuss with you and the Food Co. board. If you can spare me a few moments, I think I can interest you enough so you'll hear me out. You gentlemen are no doubt discussing the raise in power rates, as everyone else is doing. Oh yes," at Jack's inquiring look, "the raise hit everyone and the city is humming like a bee-hive."

"Shall we let him come up?" Cherron asked the other three. "He wants to talk to the Board," he added.

"Might as well," spoke up one of the members, silent until now, adding bitterly. "There won't be any Board after the first of the month."

The old gentleman presented himself at the door, in a few moments following Cherron's invitation. He waved aside the invitation to be seated and said smiling, "If I can't interest you in three minutes, I'll bid you good day, so there is no use in my sitting down."

He took a few thoughtful puffs at his cigar as if in doubt how to begin. He seemed to come to a decision, took the cigar from his mouth and with twinkling eyes said, "How would you gentlemen like to be the means of knocking the Power Trust higher than a cocked hat?"

The four men leaned forward, simultaneously waving him to a chair.

Professor Vondig, as he introduced himself, laughed softly as he accepted the chair, remarking, "I thought that would get you."

The Board members had been interested for a moment, but, as the impossibility of the thing seemed to strike them, they again assumed their gloomy mien.

"Professor," Cherron addressed him, "do you realize what an utterly impossible thing you suggest? We promised to hear you out, so go ahead. If there is the slightest merit in your scheme, we are with you heart and soul, and to the limit of our collective purse. Right, boys?" The other three nodded agreement.

"Before going further," Professor Vondig addressed them, "what is the source of the Power Trust's invincibility? Is it not the fact that they control all the sources of power? As their big sign says—'Power is Life.'"

The four nodded agreement.

"Then," he continued, "if some source of power were discovered, with millions of volts and an amperage almost beyond calculation, something that could not be controlled by the trust, what would you gentlemen say?"

As one man, they chorused "Power Trust—finish."

"Exactly," said the Professor, adding calmly, as he emitted a huge puff, "I have discovered that power."

"I'm not a fanatic," he continued, his eyes twinkling at their intent looks. "If you gentlemen will accompany me on a little trip, I can demonstrate the truth of my statement, incredible as it may seem. It will take about six hours by my plane to get to our destination. Mine is not as speedy a plane as some of the newer ones, but it will be safe."

"Why not take mine?" Cherron asked. "It is big and speedy."

"Electric?" asked the Professor.

Cherron admitted that it was.

"It won't do, then," the Professor announced. "You get your power from the Power Company. They know just where you are at all times, and I can't take the chance of being traced.

"Your name sounds familiar, Professor," said Cherron as the five men made their way to the field where the Professor kept his plane. "Wasn't it a Professor Vondig who invented the present system of selective power broadcasting?"

"My father," answered the Professor, with a grim look. "Perhaps you can better understand my animus against the Trust now. He died a pauper. They stole his invention and beat him in every court in the land.

"You may be wondering why I selected you four men out of all the millions on the earth to assist me in smashing the Power Trust. I have looked up the records of the Food Company, Mr. Cherron. I learned that you boys have been giving away almost as much food as you have been selling. That is very poor business, Mr. Cherron," he chided; then in a different tone, "but darn good humanity. A better recommendation than that, no one could ask for. You fellows have been feeding a lot of people who were pauperized by Power. That's one reason that Wilson is after your scalps."

"Here is my plane," announced the Professor as they arrived at the field.

"She is just an old-time Turbo Gas motor, but still good for three hundred miles an hour. My place is on the peninsula, in Lower California. I had to get out of the traffic lanes and use this old type plane to avoid publicity."

IT was difficult to make one's voice heard above the noise of the humming propellers. The public airport where the Professor had parked his plane was a very busy place at this time of day. It was four o'clock, quitting time for many of the busy millions, who were hurrying to get home. Very few people lived in the city nowadays. Planes rose from the field by the thousand. Straight up they rose, to the two-thousand foot level required by law for local traffic. At that level hung a huge platform—the traffic police station. As the planes reached that level they stopped, hanging suspended on their gyroprops*, until they got the signal from the traffic station, then darted away toward their destination. On the platform were a dozen speedy little one-man fliers, propellers turning over lazily. In each cockpit a speed officer sat at the controls, ready to take the air. Occasionally one of the small planes would leave the platform, and like a darting dragon-fly overtake some traffic violator, to whom he would hand a ticket, or whom he would proceed to ball out in the fashion approved by his kind the world over.

From the roofs of the city arose another swarm of planes, to hang stationary a moment, then shoot away on the various levels according to the directions of the busy sky police.

High above, on the five-thousand foot level, coursed huge liners and long distance planes, while still higher, at ten thousand, could be seen a lone trans-Pacific freighter as it hung poised a moment before starting on its long journey to China and Japan.

"All paying tribute to Wilson," said the Professor, with a comprehensive sweep of his arm toward the swarming planes, as they climbed into his flier.

The Professor displayed his long distance signal and they swiftly rose to the level of the platform, where they paused a moment. Presently a grinning policeman, who had recognized the Professor, motioned them to go on up to the level called for by the signal on the plane, and in a few minutes they were eating up the miles, southward.

Six hours later they descended by the light of the moon, up on a shelving beach, on the Gulf of California.

"There is my home and shop," announced the Professor, indicating a large concrete building, looming in the moonlight further back from the beach.

The building appeared to be about a hundred feet square, single story, and as they approached it, a slender flagpole could be dimly seen emerging from the roof and disappearing in the hazy moonlight skyward.

The four visitors looked around with lively interest as Professor Vondig ushered them inside and turned on the lights.

An enormous insulated cable entered through the center of the roof, curving over to the largest switch board any of them had ever seen. In the center of the board was a massive knife-blade switch, with copper blades ten feet long and four inches thick. It appeared to be the master switch, as coils of wire ran from it to smaller switches, although the smallest ones were giants compared to any the visitors had seen before. In the center of the room was a large drum, like the ones used in laying trans-oceanic cables. A gear and pinion was mounted on one end of the drum. Further out on the pinion shaft appeared a pulley, from which a belt ran to a gas engine, secured to the floor with heavy bolts. Everything about the place was made on a vast scale. As Cherron stated, "It looked like a giant's playhouse."

The northeast corner of the building, for twenty feet both ways from the walls was taken up with another machine built on the same gigantic lines, into which coiling wires entered from the switch board. The Professor explained that it was a new type of power broadcasting machine of his own design.

The east wall was literally covered with rheostats, voltmeters, ammeters and safety catches.

A small room had been built on the southeast corner of the plant into which the Professor led the way, saying. "These are my living quarters, gentlemen. Be seated, while I explain to you the source of my power.

"This," laying a piece of rock on the center of the table around which they were seated, "is a piece of quartz, which has very peculiar qualities. When subjected to an electric current this rock becomes what we call gravitation-negative; that is, it loses its attraction for the earth and tries to fly out into space."

Noticing the doubtful glances between the four guests, he connected two wires, which he evidently had ready for that purpose—one to each end of the stone. He then turned a switch. Nothing happened. Calmly puffing on his cigar, he next began regulating a small rheostat. As the current increased, the stone began to quiver, and presently, to their amazement, rose from the table and floated free, only held down by the trailing wires.

With a little smile of triumph, Professor Vondig turned off the current. As the stone thumped back on the table, he seated himself and continued his explanation.

"On this rock hinges my whole discovery. For years we scientists have conjectured that all space outside our atmosphere envelope is a seething pool of electric energy. Electrons are thrown off from the sun in enormous quantities. They can penetrate our atmosphere only for a short distance, however. I figured that if a conducter could be carried out into space and held there, then this infinite pool of energy could be diverted to our uses. I tried carrying a wire upward by means of a balloon, with indifferent results. The balloon would not go high enough. While looking over some old books in the Public Library, I came across an account of experiments carried out by a man whose name is now forgotten. He succeeded in producing negative gravitation in a piece of quartz, by means of an electric current. The kind of quartz was not mentioned on the book, but it gave me the idea. For four years I hunted quartz and experimented. At last I found it. Gentlemen, by grinding this rock and mixing certain chemicals with it, I can, by applying the proper voltage, gave it a lifting power of one ton. Think of it; a piece of quartz, eight by ten inches, lifting a ton.

*Gyroprops was the name given to the helicopters, one embedded in each upper wing surface. Their relative speed was controlled by a gyroscope in such a way that a sudden gust of wind would not tip the plane over when it was hanging stationary, supported by the gyroprops. Any variation from the level was automatically compensated for by the rise in speed of the helicopter on the lower wing.

"That discovery alone is worth untold wealth. With a properly constructed car and this lifting power, interstellar space could be navigated. If I should make this discovery public, however, it would go the road of father's invention. Wilson would get it.

"The only way out for all of us is to break Wilson, and by the Living God, gentlemen, that is what I am going to do."

For an instant there was a trace of excitement in the Professor's voice, then his eyes twinkled again as he lit another cigar and continued.

"What you no doubt mistook for a flag-pole, is a copper cable, carried out into space and held there by a ten foot cube of this quartz. The current coming in over it is terrific—way beyond measuring with any instrument that I have been able to construct. All the power from the Power Trust's thousands of plants can't equal the output of this one cable. Gentlemen, I have tapped the reservoirs of space. No machine designed by man has ever been able to approximate the voltage in a lightning flash. This power of mine is the power of all the lightning. So much power that I dare not attempt to use more than a small fraction of the potential output.

"With that broadcasting machine in the corner of the plant and this power at my disposal, I can burn out any generator of the Power Trust within thirty seconds. It is my intention, however, to install two more cables, and enough broadcasting machines to take care of the load, as I destroy the plants, and that is why I need financial assistance."

"How long is that cable, Professor?" asked Cherron, "and what keeps it from breaking of its own weight?"

"The cable is nearly five hundred miles long," answered the Professor. "Replying to your other question, the first cable I tried to erect did break. I overcame that difficulty in this way: The quartz compound can be melted by intense heat. It was necessary to erect a large vat, at the factory where the cable was manufactured. The vat was filled with the melted quartz, then the cable was passed through it. As the cable emerged from the vat, a thin coating of the compound clung to it, and cooling, formed a layer of quartz on the outside of the cable. The compound is even a better conductor than the copper. Any current passing through the cable also flows through the coating of quartz. In that way the cable is self-sustaining. In fact, it couldn't fall even though the cube of quartz were to be broken loose by a meteorite.

"The cable consists of a copper core six inches in diameter; then the layer of quartz. Outside that comes a four-inch layer of insulation. The cable is reinforced on the outside by layers of steel wire. There is a small wire imbedded in the insulation. I had to have a return circuit to activate the quartz. After the first hundred miles had been paid out, the current from space started to flow, and the small wire wasn't needed any longer.

"Now, gentlemen, I promise you a demonstration. At eleven o'clock tonight I plan to destroy that wave motor just north of Golden Gate, that is, the generators in the plant. It is ten minutes to eleven now.

"There won't be much to see," said the Professor, "at least not on this end. The other end at that station is where the fireworks will be. That plant is automatic and there shouldn't be anyone around there to get injured. That is why I settled on it, to demonstrate with.

"It lacks ten minutes yet," he continued. "It will take a few minutes to warm up the transformers, and I have to plot the direction, so if you care to accompany me," he said, rising, "you are welcome to do so."

The four men followed him into the plant.

THE Professor went to the huge switchboard, and closed one of the switches, at which the transformers started humming, with a deep musical note. He next went to a desk and after figuring for a minute, with dividers and slide rule, took his station by the instrument board on the eastern wall. Watch in hand, grim of face, slowly puffing on the ever present cigar, he stood like a figure of fate, one hand on the control lever of a rheostat.

The four men stood by the broadcasting machine, silent, their eyes on the Professor's hand, resting on the rheostat.

Could it possibly be true? their thoughts ran. Was the world at last to be freed from the menace of the Power Trust? Could he, by a flick of the wrist, destroy that plant, so many miles away?

"Now!" broke in the Professor's deep voice, as he pulled the lever down. For an instant the humming of the transformers increased to a high, shrill note, then died away to the low, steady hum again.

The Professor turned to them, his face exultant. "Gentlemen," he said, "if my calculations are not wrong, the Golden Gate plant is now a wreck.

"I have a receiving set here, turned in on the World News," he said as he led the way back to his quarters. "We should be hearing of it in a few moments."

"Rioting reported in several Eastern cities," came the broadcaster's voice, as the Professor turned on the radio, "thought to be the result of property"—on the voice droned—stock reports—stolen planes, etc.

Then excitedly—"Golden Gate power plant blown up. Thought to be caused by short circuit. Plant utterly destroyed. Shock felt all over city"—click.

The Professor shut off the radio, turned to the four men and asked, "Satisfied, gentlemen?"

The four Food Company men, men accustomed to repress their feelings, were now as excited as schoolboys. With almost the same movement, they drew their check books and asked, "How much do you need Professor Vondig?"

"Oh Man!" chortled Wall, the most taciturn member, "to think of making that fat Wilson dance to his own music. It's worth a million to me." He hastily scribbled a check and tossed it to the Professor, saying, "When that's gone, there's plenty more."

Professor Vondig waved their checks away, with a contented little laugh and said, "I don't want your checks, men. Here is my plan. One of you go to Dick Smith, of Copper Ltd., and order the cable. He has the specifications. He helped me financially on the first one. The poor devil is almost gone to the wall now, or I would not have to come to you for assistance. Just another victim of Power, Dick is."

"Why, Dick is a friend of mine," Cherron stated. "Is he in on this?"

"Heart and soul," answered the Professor. "He has been from the beginning.

"Keep things quiet. Order the cable, and go back to your business. I'll need several thousand dollars to put up another building, and install some more machinery. If you gentlemen can arrange it so I can have the cash, it will be better. Then there will be a crew of

men to pay. You fellows arrange that with Dick. We don't want any checks passed. Wilson controls the banks, and he might connect us with his plant disaster."

ONE month later P. G. Wilson sat in his palatial office, fifty feet underground, in the basement of the Power Building. No towers for that gentleman. Towers were too easily bombed. His father had gone to his reward in that manner, in the tower of this same building, ten years ago.

The system of offices covered two acres, all underground, corridors patroled by armed guards, and all visitors had to submit to search, before they were allowed to enter Mr. Wilson's august presence.

Mr. Wilson's fat repulsive face was very thoughtful this morning. He had just received the financial statement of the money expended for repairs on the Golden Gate plant. The amount was staggering.

A new radio, turned very low, was announcing the current events at his elbow, but Mr. Wilson was not paying much attention to it.

Presently, he made up his mind. He pressed a button, and the head clerk's voice answered. "Jones," ordered Wilson, "prepare a letter to the International Power Commission. Request an additional raise of two per cent in power rates, to cover our loss in the Golden Gate plant."

"Mr. Wilson," a guard interrupted, "there's a boy here with a personal message for you. Shall I admit him?"

"Always admit personal messengers, Dake," Wilson snapped. "I have to tell you that every day."

"Yes, Mr. Wilson."

"Here he is, sir," the guard said as he returned, leading a ragged boy by the arm.

"Where'd you get this?" Wilson snarled at the boy, as he read the letter the boy handed him.

"A man give it to me, an' give me a dollar," said the boy beginning to cry at Wilson's glaring look.

"What did he look like?" Wilson shot at him.

"He—he had a crutch, an' one eye wuz——"

"One eye was what?"

"It had black cloth on it, an' clothes all ragged," the boy finally stammered.

"Let him go, Dake," said Wilson to the guard. "Whoever gave him this was disguised; too late to catch him now."

Wilson turned to the phone and after a short wait, said "Hello! War Office? Listen; I just received this note, given by a party unknown to a street urchin to deliver:

'Piggy Wilson:

You have forty-eight hours in which to lower the power rates fifty per cent. Within one week from date, you will turn over all power holdings to the various governments, in whose territory they are located, at a just valuation.

The Golden Gate plant was destroyed by us. If within forty-eight hours your decision is not broadcast by World News, we act.' "

"Piggy?" in an inquiring tone, from the phone.

"Yes," Wilson answered, "that's what the boys used to call me at school."

"Fits like a glove," murmured the Secretary, to himself.

"What's that?" Wilson snapped.

"Yes, Mr. Wilson, we'll look into the matter at once. I'll turn it over to the Secret Service."

"You'll do nothing of the kind," growled Wilson. "I want a five plane patrol, and a cordon of infantry for each of my plants."

"But Mr. Wilson, that is beyond my——"

"Never mind all that. Get busy, or there'll be a new Secretary before night," said Wilson, as he broke the connection.

"No chance of tracing that note," mused Wilson, "written with a pencil, no finger marks on it. Someone having a joke at my expense. I'll make 'em think it's a joke, if I locate them."

Then, turning his thoughts to more pleasant things, "Let's see," checking on his fingers. "Today we take over Food Products, Inc., Copper Ltd., United Clothing ——" Running out of fingers, he seized a pencil and began to check on a pad, stopping occasionally to rub his hands unctuously—a trick descended from some ancient forebear.

Presently he ceased figuring and with a pleased smile, said aloud. "Another month, and those that want to work, will work for me, or starve."

Six hours before the forty-eight hour ultimatum to Wilson was to expire, a plane landed on the beach in front of Professor Vondig's plant on the Gulf of Lower California. Five men got out and made their way toward the plant. Four of them were former members of the Food Company Board, members no longer. Wilson had taken the company over for a fraction of its value. The fifth man was Dick Smith, of the defunct Copper Ltd.

"I see the Professor has his other cables up," remarked Cherron, as they approached the plant. Three rigid cables now disappeared, stretching upward from the roof.

"I hope Wilson thinks we're only bluffing and doesn't give in," said Smith. "We should smash him anyway," he continued, "look at all the misery he has caused."

"I'm in favor of no mercy," contributed Strull. "That fat monstrosity has never shown any to anyone."

"The Professor thought it politic to give him a chance to be decent," said Cherron. "That way, we'll have the government on our side. We won't be blamed for the casualties that may occur. The Professor knows the Wilson family too well to issue that ultimatum, if he thought there was any chance of Wilson's compliance with our demands. What's worrying him is the possible loss of life, although, God knows, most of the poor devils that work for Wilson would be better off dead. We pushed the Food Plant to the utmost this past month. We have food enough stored to last the nations for a month, in a pinch. I gave a quiet tip to the managers of other essential products plants. Most of them have been turned over to Wilson now. He held mortgages on all of us through his banks. However, last month's output has been stored at strategic points, with an eye to relieving the situation as much as possible."

The five had now entered the plant and were met by the Professor with a hearty hand-clasp, and a puff of cigar smoke. The Professor's best friend told Dick Smith that the Professor always went to bed with a cigar in his mouth. At least, no one had ever seen him without one in the daytime.

"All set, gentlemen," he greeted them. "I've installed a news broadcasting set. At twelve today, when the ultimatum expires, we'll cut in on the World News and broadcast a warning."

The announcer for the World News was preparing to broadcast an additional two per cent raise in power rates, when his words were drowned by a deep powerful voice.

"Citizens of the World: At exactly one o'clock, Pacific Standard time, every power plant generating on the fifth band will be destroyed. Everyone is warned to keep away from all designated plants."

The deep voice ceased and the dumfounded announcer took up his interrupted duties.

Mr. Wilson, waiting in his luxurious office, to hear his power raise announced, bit his cigar in two. "What the Hell! this joke has gone too far," he grated and seizing his phone, called the War Office.

"Did you hear that?" he yelled, when he got his connection. "This thing has got to stop. Did you put on those guards?"

He was assured that all precautions had been taken, and sank back in his chair with a relieved sigh. Nevertheless he kept one eye on the clock.

Closer and closer crept the hand—five minutes to one—three minutes. Would the damn thing ever reach twelve?—one minute—slowly the seconds dragged—one o'clock. Bo-o-om, a deep reverberating roar that shook the city to its foundations.

Br-r-r-r-r.

MR. WILSON, now a quivering mass of fat, answered the phone. A servile voice, with an undertone of exultation in it, said, "Head Clerk speaking, Sir."

"Well! what is it?"

"Mr. Wilson, they've done it. The reports are coming in fast. Every plant on the five band is a wreck. Some of the buildings are not damaged much, but every generator is a smoking mass of fused metal. Worse than that at the Golden Gate, and——" The voice rattled on, but Mr. Wilson didn't hear it.

He was holding his head in his hands and groaning, "Millions—Billions."

The deep voice that had announced the catastrophe just over, suddenly spoke in Wilson's ear.

"Citizens of the World: The Power Trust has felt our might. Sufficient power will be furnished to users on the five band, on condition that not one penny shall be paid to the Power Company. Anyone violating this rule will be cut off. This is only the beginning. You will be warned, as the destruction continues. If anyone was injured in the plants today, we are sincerely sorry. The current furnished is free. The destruction will continue until the Power Trust is crushed."

Wilson recovered slowly from the stunned silence in which he had listened to the voice on the radio.

"Billions of dollars in damage. All my five band plants destroyed."

He listened apathetically to the reports coming in and gazed half-seeingly at the television, as scene after scene flashed by, each verbal report being accompanied by its attendant view of destruction.

What had happened to his dream of power?

For years, every device of the gigantic organization had been working to the one end of World Dictatorship for the Wilson family.

What was this new power? All the collective wattage of his thousands of power plants could not equal the tremendous energy displayed in this wholesale destruction, and his enemies were furnishing free power.

Ha! some new source of energy that costs nothing to operate.

Suddenly he seized the phone, the light of battle on his face.

"War Department?" he asked, when he got his connection.

"Wilson speaking. Did you get a direction on that broadcast?"

"Yes, Mr. Wilson," came the voice of the Secretary in sugary tones, but the Secretary's face had an altogether different expression.

"The power wave that wrecked your plants, and the voice on the radio, came from a point just fifty miles north of the extreme tip of the peninsula of Lower California, on the Gulf side.

"Carney," said Wilson, calling the secretary by name, "you will immediately mobilize a fleet of planes and proceed to capture that plant."

"Mr. Piggy Wilson," came the reply, the voice sugary no longer, "with the compliments of the President and myself, you and the Power Company can go straight to hell."

"W—what's that?" stammered Wilson.

"You are through—finished," said Carney distinctly, "and my advice to you is to go to your nearest plant and use yourself to short circuit one of your own generators. Now, thank God! we can feel like men again," he added as he broke off.

IT was hard to realize. Four days ago, practically the supreme dictator of the Planet. Today, told to go to hell by the man who would then have licked his boots.

He wasn't beaten yet. There was one bunch of men he could depend on. Five hundred fliers, fighters to the last ditch. They would have to fight. Wilson's men; his wolves; criminals all, who would have paid the supreme penalty long ago, if he had not protected them. His interests were their interests. If he went under, they would receive short shrift from the public.

Wilson gave orders by phone to have the planes and fliers ready, and half an hour later arrived at the airport himself.

It was an imposing array that spread before him, as he spiraled down in his little flier. Five hundred planes, gyroprops turning lazily, ready to take the air and sow destruction on the instigators of his own misfortunes. Giant bombers were there, one bomb from one of them, on the plant of his unknown enemy, and it would be the finish. He would try strategy first. He must know the secret of their power if possible. If not; well, his plants could be rebuilt and things would go on as before. "Only," he thought grimly, "there would be some new government officers; he'd show them how to be insolent to The Wilson."

Wilson landed and took his place in a giant bomber, in the center of the formation. Whatever his faults, he was no coward, and he meant to be there at the finish. If he had stayed in his office another ten minutes, he would have heard a very interesting announcement.

At his signal, the low drone of the whirling props rose to an angry crescendo and the huge mass of planes rose as one. Perhaps twenty feet they rose, when every gyroprop went dead, as a sullen boom echoed over the city and they crashed back to earth. Lucky they were no higher. There were enough explosives in those planes to wreck the entire city. The excited pilots climbed out of their cockpits, asking each other what

was the matter. The trouble was not hard to locate. All Wilson's fourth band generators had been destroyed.

The pilots of great air liners, streaking their way over land and seea, all the multitudinous fliers, had felt that sickening drop as the power failed. Only for an instant. however, then the unknown power took up the load, and the many planes went on their way.

All but Wilson's; his selective rays were cut off. His planes dead; his punitive expedition a failure.

Six men grimly watched the television screen, as the five hundred armed planes crashed back to earth, halted in their intended flight, watched the crew disembark, saw Wilson go with drooping head as he passed out of range of the television screen. Grouped in the annex, which the Professor had had erected during the past month, they stood tensely before the screen that covered one entire wall. Here all the passing events could be kept track of and Wilson's activities closely watched.

The annex was crowded with queer machinery. The other three walls were covered with switches, coils and gleaming dials. A dozen men were scattered about the room, expert electricians, testing, regulating and changing adjustments, as the plant took over the enormous load, formerly carried by Wilson's wrecked power plants.

One of the men who watched the television spoke.

"Do you think that Wilson will quit now, Professor?" he asked.

"Rather difficult to say," replied the Professor. "According to World News all his men have deserted him except the five hundred fliers. Rioting has broken out among the deserters, and all the police reserves are out trying to protect the Power Company's property.

"I don't want to destroy the other three bands if it can be avoided. The extra cables will take care of the load, but there are bound to be a lot of casualties on those bands, as all the power plants are in thickly populated districts.

"Wilson's last resort will be gasoline-driven planes. He is not the type of man you would call a quitter. But I don't know where he could pick up five hundred gasoline planes on short notice."

"There are a thousand of them stored in those old Turbo Motors plants," said Dick Smith. "Wilson smashed Turbo for bucking him, and took over the whole works on a mortgage. There are bombers, scouts and observation two-seaters in the bunch. Turbo was filling a Government contract when he went broke."

"In that case we can look for trouble, just as soon as they can transfer the weapons," said the Professor. "There's no television transmitting apparatus at that old abandoned plant, so we'll have to mount guard and watch for them. Well, I'm ready for them," he added.

"Just what are our defenses, Professor?" asked Cherron. "They'll have machine guns, demolition bombs, heat rays, and some of those bombers can mount one pounders."

"I saw you looking at that network that covers the outside of the buildings, Cherron. That is the only defense we'll need, I think. In case it fails, I have another that won't fail. The explanation of it all is rather technical, so we won't go into that now. I'm rather busy at present," the Professor added, as he went over to the switchboard to instruct one of the men.

"Here they come!" came the cry from the watcher on the roof, at daybreak the following morning. It was a magnificent sight. Five hundred planes in the form of a giant wedge, sweeping down on them. A great bomber was at the apex of the wedge, with a white flag on its left wing.

Humming like a swarm of mammoth bees, they swept forward and encircled the plant. At an altitude of three thousand feet they formed a great circle, a half mile in diameter, where they hung stationary on their gyroprops, the plant below them in the center of the circle.

THE plane bearing the white flag dropped swiftly toward the beach and landed gently a short distance from the door of the plant. As the bomber landed, P. G. Wilson stepped out and came quickly toward the building. With his face set and grim, Professor Vondig met him at the door.

"Are you the man responsible for these outrages?" snarled Wilson as the two men met.

Professor Vondig bowed, and in his deep voice replied:

"I have that honor, Mr. Wilson. Vondig is the name, You no doubt remember my father, whom you robbed of his patents?"

"I remember him," rasped Wilson. "I'll give you and your friends ten minutes to surrender this plant or—" waving his hand upward—"I'll turn my wolves loose and you will go to join him. Turn over your discoveries as compensation for damages done to my property and you and your friends may go free. Ha! Cherron and the food board," catching sight of the men who were grouped in the doorway, "and Dick Smith too. So you down-and-outers are in on this?" Wilson laughed nastily. "Professor Vondig," bowing sarcastically to the Professor, "you have surely picked a bunch of lame ducks to assist you, and since I see who your associates are, I withdraw my offer to arbitrate. As soon as I reach my men, you may consider hostilities open and I'll have the extreme pleasure of blowing the whole bunch of you to hell.

"Gentlemen," with a nasty smile, "I bid you good day, and—good-bye." Wilson clenched his hands and without another word, returned to his plane and joined the cordon of planes over the plant.

Professor Vondig entered the plant, went to the switch board and closed the circuit to the netting surrounding the building, then climbed the stairs to a tower on the roof. He declined the assistance of his five friends, saying, "It won't be necessary boys, I can handle them alone."

"By the Lord Harry!" Cherron ejaculated, "he never missed a puff on that cigar! "The Professor must believe in his defenses," he continued, "but I don't know. With their heat rays and tons of bombs.... Well! we're in for it, so let's shake, boys, and hope for the best."

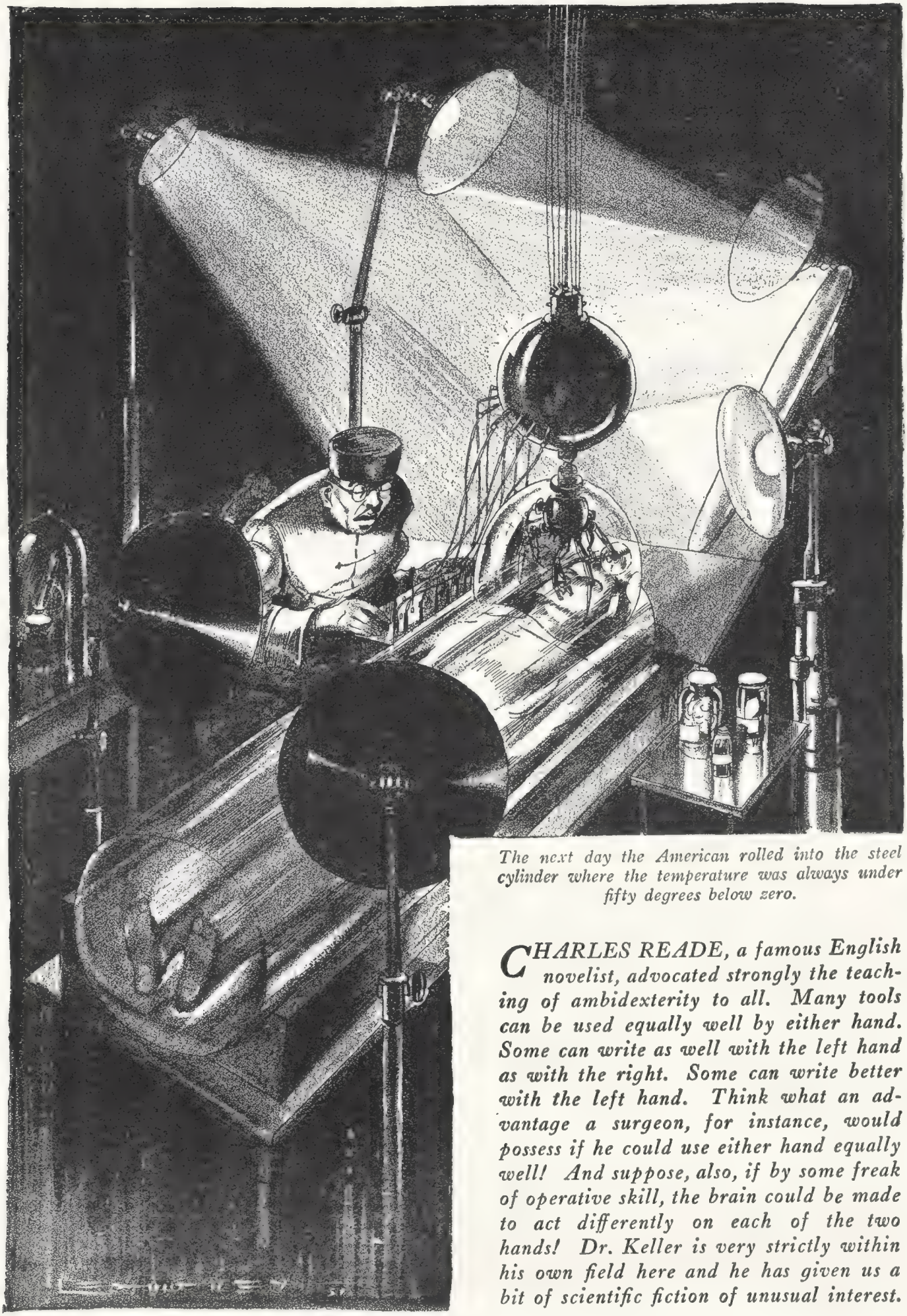
The five men solemnly shook hands and waited with tense faces for the battle to start.

They hadn't long to wait. Suddenly a heat ray, from one of the planes, struck the beach. Slowly it crept toward the plant, the sand in its path exploding with a hissing noise. Now another ray joined the first, then another and another. No answer came from the plant.

Those devils in the cockpits above seemed to enjoy prolonging the end like a cat playing with a mouse.

The hissing of the heat rays now merged in a loud roar. The planes above had divided forces. One hundred of them now clustered directly over the plant around the cables, while the other four hundred had

(*Continued on page* 41)



The next day the American rolled into the steel cylinder where the temperature was always under fifty degrees below zero.

CHARLES READE, a famous English novelist, advocated strongly the teaching of ambidexterity to all. Many tools can be used equally well by either hand. Some can write as well with the left hand as with the right. Some can write better with the left hand. Think what an advantage a surgeon, for instance, would possess if he could use either hand equally well! And suppose, also, if by some freak of operative skill, the brain could be made to act differently on each of the two hands! Dr. Keller is very strictly within his own field here and he has given us a bit of scientific fiction of unusual interest.

The Ambidexter

By David H. Keller, M.D.

Author of "The Revolt of the Pedestrians," "Stenographers' Hands," etc.

Illustrated by MOREY

THE greatest surgeon in America looked at the greatest surgeon in Asia. The Oriental in return looked at the white man with genuine admiration.

"From my student days I have held the greatest reverence for you, Dr. Hopkins. Reverence for you has been a part of my daily life, also envy for your skill and despair of ever reaching the heights of perfection you have attained."

"That was nicely said, Wing Loo," replied the man from Chicago. "But, after all, there is only one thing, and that an accident, which prevents you from being my equal, or superior, at the operating table and that is that you work with one hand while I am ambidextrous."

"I have heard of that. You were born that way; and when your most wise parents discovered it, they were wise enough to let you cultivate the use of both hands. Thus, in operating where there is but little room, it is as though two surgeons were operating, but there is only one body."

"Just my good fortune," admitted the American. "But what do you think of the future of surgery? Does it not appear to you that our specialty lags behind the other sciences? In every other field the greatest advances are being made, but in our field all we have done is to obtain a slightly greater technical skill."

"I have done a few things," whispered the yellow man, almost as though he were making the modest statement to himself.

"Rumors of those things have crossed the ocean."

"But only rumors. No one knows what I have in mind. I have talked to no one, published nothing."

"But you did not kill your successes. I saw the bridge builder, the Chief of the Trans-Pacific Steel Company. No! He did not betray any secrets, but I saw that arm. He had a dislocation of the elbow, and that was the way I saw it."

Wing Loo smiled, the inscrutable, mysterious smile of the Orient.

"And when I saw that arm," Hopkins continued," I knew that you had done something that would revolutionize surgery."

"It was nothing," sighed the Chinaman. "The man had his arm torn so badly that amputation was necessary. I simply transplanted the arm of a cooley."

"I know that much. There was a difference in the colors of the two arms."

"Of course I took all precautions. The man who furnished that arm was in perfect health."

"Naturally. You would not want your patient to become diseased through his new arm. I know your pride well enough to realize that you would not overlook the slightest factor in an operation like that. I must admit that I do not know how you do it—but the fact that you do it is what brought me to China."

"You honor me," said the Oriental.

"Not at all. Your work honors you more than any individual could. But my visit is almost a selfish one. Briefly speaking, I want you to operate on me."

"Now, indeed, you are honoring me. You mean that you pass by Bloodgard of New York, Smathers of London, Verdin of Paris and the great experimenter Largo of Rome and come to me for an operation?"

"That is what I did. But I did not pass them by. I saw them all on my way East, and they all said the same thing."

"And that was?"

"Wing Loo of Canton is the only man who has even thought of performing that kind of an operation."

In spite of his imperturbability, the yellow hand handling the ivory cigarette holder trembled.

"And so I came. To ask of you a favor."

"Yes?"

"I want you to operate on my brain."

"On your brain?"

"Absolutely. The best neurologists in America have diagnosed a brain tumor on the right frontal lobe. There is evidence to show that it is slowly growing. Unchecked, it will some day destroy my mentality; even now the public knowledge that such a tumor existed in my brain would absolutely check my surgical career. No one would want me to operate on him; he would be afraid."

"What do you want me to do?"

"Remove that portion of my brain, replace it with a similar portion of brain from a normal person and send me back to America for twenty more years of usefulness to my nation."

"How do you know that I can do all this?"

"I do not know. I can only hope."

"But the brain is different from the arm. Decay is rapid. The slightest injury leads to almost instant degeneration of the cells. You know that this fact is the reason back of our lack of progress in neurology."

"I realize all that. At the same time, I believe that you can do it."

"I can do it," the Oriental admitted. "I can do it. In fact, I have done it. In my home I have a little toy dog, a Pekingese. It is running around in the best of health and spirits, but, controlling the body, there is the brain of another dog. But with a human being it may be different."

"It might be different," admitted Dr. Hopkins, "if I asked you to transplant the entire brain or even one half of it. But all I want is to have the frontal lobe on one side replaced. Men have lived without the frontal lobe and have done some work, but not surgery. I talked with some men in Vienna, and they still feel that the use of this part of the brain is unknown, something only to be guessed at, but perhaps in some way connected with memory. At least, there is no motor function.

"This lobe has to be removed from my brain, or the tumor will kill me. If the frontal lobe on the right side is removed, it will have to be replaced with something, or pressure changes will cause deterioration of the previously healthy brain. Why not replace the diseased lobe with a healthy one?" said Dr. Hopkins.

"You think it will have no effect on your surgery?"

"I am confident of it."

"And for twenty years you will be still considered the world's greatest operator?"

"The second greatest, Doctor. After you I come."

"I will do as you request," the Asiatic at last said. "It will take time. I must make careful preparations, take accurate measurements. It will not be easy to find a man with the same cranial contours—who is willing to take part in such an operation."

"Of course, I will pay him well."

"If I find the man, he will be glad to do it—without pay." There was a slight smile on the yellow face as Wing Loo said this. "In the meantime, I want you to become my guest. My humble home will be honored by your worthy presence. In a month, perhaps in less time, all will be ready. Before the operation I will explain my technique."

THREE weeks passed. During those three weeks Dr. Hopkins was indeed an honored guest in the palace of the greatest surgeon of the East.

Then he was called to the surgeon's office.

"You have been at leisure, Dr. Hopkins?" purred the Chinaman.

"Very much so."

"You have thought of other things besides surgery?"

"I am afraid so."

"But after play comes work. We must begin. Here is what I do. I take your entire body and rapidly freeze it. While it is frozen, I operate. Then I thaw the body and inject adrenalin into the heart. Active life is renewed. In the years to come freezing will replace chloroform and ether as a general anaesthetic for all operations."

"It cannot be done, Dr. Wing Loo," declared Hopkins, shaking his head emphatically. "Take a piece of meat and freeze it. At once there is a destruction of cells. The water in the meat turns to crystal ice and in expanding destroys the cell wall. Place the meat in a warm room and at once decay, putrefaction sets in. Am I right or wrong?"

"Both. If the process of freezing is slow, gradual, you are right. But I do not use that method. I take the person to be operated on and place him in a steel cylinder where the temperature is fifty degrees below zero. The freezing takes place so rapidly that there is no time for the water to form crystals. The entire body simply becomes a piece of frozen, suspended animation. I can then raise the temperature to ten degrees below zero and keep the animal in that state for days.

"Let me show you. I open this box. Here are two eels, both frozen by my method. With a forceps I pick one up and throw it on the floor. It shatters to bits as though it were made of glass. I place the other in this vase of hot water. See? It will soon come to life and move. Already it begins to quiver. And that eel has been frozen for over a year."

"All this is new to me," admitted Hopkins. "But you have to be near the body to operate. How can you retain any delicacy of touch at ten degrees below zero?"

"The person I operate on," answered the Chinese surgeon, "is in a glass case. Above the site of operation my instruments are suspended. I sit at a table by the cylinder. The field of operation is made visible to me by a series of mirrors. I press little buttons and the instruments above the patient do my bidding. The operation is always perfect, because it is entirely mechanical. There is no chance for the slip of a nervous hand."

"But how about your arteries? I can understand that there is no bleeding while the operation is going on. But afterwards?"

"I have a special method of approximating the ends of nerves and arteries," replied the Oriental, smiling. "This is my own discovery, and you must pardon me if I keep it to myself, at least for a few years, but rest assured that there is no bleeding and that the operative wound heals rapidly."

"I can only say that I am astonished," admitted Dr. Hopkins.

"If you were an Oriental, Doctor, you would be astonished at nothing that happens."

"Perhaps you are right."

"And now that you have my idea, my method of operating, do you still want to take the risk?"

"I think so. The headaches are growing worse. Some days I am not sure of my own personality. I think that I have done things—in China—that I would not have done under ordinary circumstances."

"So many people act that way in China, even when they are well. However, human conduct is a very singular thing. I will operate tomorrow."

"You have the other man selected?"

"Indeed, yes."

"And he is willing?"

"So far, he has not questioned the desirability of the procedure."

"Will you let me pay him?"

"No, indeed. This entire operation is a present from a beginner in surgery to the world's greatest operator, the only ambidextrous surgeon on this earth."

"I shall be glad to get it over with," sighed Hopkins. "The way I have been feeling, the peculiar ideas I have had lately, the way I have been acting—anything, even death will be a change for the better."

"Death is a great adventure, Dr. Hopkins."

"I agree with you, Dr. Wing Loo."

The next day the American was rolled into the steel cylinder where the temperature was always under fifty degrees below zero. All struggling was prevented by a light, preliminary nitrous oxide anaesthesia. In a short time life was suspended, all animation at an end. Later on, the body lay on the operating table, the battery of glistening instruments was suspended above it and all enclosed in a glass case. On one side sat the surgeon and in front of him was a table of push buttons. Every consecutive step of the operation had been arranged for. The necessary instrument for each detail was in place and the mechanism necessary to enable that instrument to make the proper movements was in perfect order. As Dr. Wing Loo sat there, looking at his invention, he could not help smiling in a pleased way.

"It is perfect," he admitted to himself. "It is so mechanically perfect that I could make a robot to sit here and press the buttons. That will come in time. And now for the operation. My mirrors are working perfectly. I will soon be able to see if the diagnosis of tumor of the right frontal lobe is correct." He pressed a button.

A small circular saw descended on the forehead of the American and started to cut its way through the frozen flesh and frontal bone.

A MONTH later the two surgeons again sat in Dr. Wing Loo's office.

"I am feeling fine," said Dr. Hopkins. "I have spent a part of each day with my right hand in my pocket and my left hand performing imaginary operations, with my nail file and manicure scissors as instruments, and, as far as I can judge, that hand has lost none of its dexterity by having a part of its controlling cerebrum replaced. If you have some simple operation to do, I should like to operate before I leave China, and in that operation use first one hand and then the other. It will be interesting for you to watch me and make notes, so your case history will be complete."

"I think that can be arranged for, Dr. Hopkins. But it will be years before your case history will be complete."

"No doubt. But you never told me about the tumor. Was it harmless or a glioma? And how is the poor fellow doing who contributed his brain to my welfare?"

"Oh! The tumor was a harmless variety, though it was causing pressure symptoms. As far as the man was concerned, I beg of you do not worry about him. I am sure that he feels honored to think that a piece of his insignificant brain is reposing in the cranial cavity of the greatest surgeon in the world."

"I wish you would stop saying that, Doctor. I am sure that if the world ever knew what you were doing in the way of experimental surgery, they would worship at your shrine."

"The time has not come for that. Someday perhaps—after you have died of old age, if I am then alive. But now I do not want to take your honor from you; and you look so much younger since the operation."

Hopkins looked at himself in the long mirror on one side of the room. He smiled as he pushed the hair away from his forehead.

"It was a clever piece of surgery, Doctor. The scar is hardly perceptible, and when the hair grows longer, no one will know I have been operated on. I really did not want it known. So few people have confidence in a man who has had brain surgery. We had a general with a brain tumor, and I know the man was capable, but the War Department thought they could not trust his judgment. Of course, you will keep this operation a professional secret?"

"Certainly, Dr. Hopkins."

The two men looked at each other. It was as though two fencers had paused for a moment to decide on the next attack.

"But you will know, and I will know, Doctor," the Asiatic said finally, "that there was an operation."

"I will never forget that."

"No. You will never forget that."

A week later Dr. Hopkins performed a very delicate operation. First he used the right hand and then he used the left. Wing Loo watched him, and at the end, complimented him highly.

"Your left hand was mechanically perfect, Doctor."

"I felt so. Of course, I will continue to plan my operations with the left side of my brain. That is where the speech centers are, you know. The orders will be conveyed to the right brain and through those centers relayed to the muscles of the arm. The neurology of the central nervous system is all very interesting, Doctor."

"It certainly is," agreed the Oriental.

The following month Dr. Hopkins reeturned to Chicago. On the long ocean voyage he had an unusual opportunity to think. His final conclusions were that he was gloriously alive, very fortunate and extremely capable of years of more work; he also felt that in some ways he had been a trifle foolish in China and that some of the statements made by Wing Loo had been a little childish.

"The average Oriental is a queer mixture of savant and youth," he said to himself. "At the same time, he was very kind to me, and when I arrive at Chicago I must send him a worth-while present. Perhaps a complete set of my writings bound in half morocco would be appropriate."

He had been away from his office for months, and he found a lot of work accumulated. There was a number of wealthy individuals who needed operations, but who wanted to wait till the great Master could give them individual care. As usual, he selected his cases, giving individual preference only to those who could give him either the greatest financial reward or the largest modicum of glory. When not operating, he lectured to his classes or read scientific papers before medical societies.

Immediately on arriving in Chicago he had turned all the resources of his surgical laboratory towards the duplication of the surgical innovations that he had seen used in China. Some of his technicians laughed at him, while others, long haired and wild-eyed, enthused over being allowed to participate in such revolutionizing studies. The greatest secrecy was preserved. When the time came for an announcement to the world Dr. Hopkins wanted all the glory.

ANOTHER month passed and then a year and then two years. The great Chicago surgeon was asked to operate on the daughter of the richest man in America. It was not a difficult operation, simply the removal of a harmless tumor from the girl's neck. Hopkins decided to do it in his private operating room, alone, under local anaesthesia. Hours later the door of the operating room was forced open and the poor girl found, dead, on the operating table, the head completely severed

from the body. Dr. Emanuel Hopkins had disappeared. Prolonged and persistent search failed to obtain the slightest clue.

His friends, remembering the brain tumor, placed the kindest construction on it and told the world that he had gone suddenly insane and in this condition had committed murder and suicide. A week later the murder was forgotten in the interest aroused by the gangster murder of twelve bootleggers from Detroit.

It was spring time in China. Dr. Wing Loo sat in deep meditation as he slowly scratched the head of his favorite Pekingese, the dog he had operated on years before.

"Some day he will come back," he said to himself. "My Tong brother in Chicago writes of a strange murder and an equally peculiar disappearance. Someday he will come back to me, my beautiful experiment, my Occidental brother, my dear, damned fool."

As though an unseen hand were pulling the wire to make the human puppets dance, the thing that the Chinaman felt sure was going to happen, took place that very day. Dr. Hopkins came to the office and asked for an interview. Only the card, handed in by the servant, told that the man was the one-time great American surgeon. The writer who walked into the office was haggard and bent and there was a look of furtive fear on his face.

"So you have come back, my dear Doctor?" whispered the Oriental.

"I have come back," answered the man from Chicago. "Across the continent and the Pacific I have come back to you. I have come back——"

"You have said that three times!" interrupted the Chinaman. "Once would have been once too many. I can see that you have come back to me without being told so often." The voice was sharp and cut like a knife. But the American looked at him and repeated the objectionable phrase.

"I say that I have come back to you. What did you do to me and why did you do it?"

"You mean the operation?"

"Certainly."

"Why, I did just what you asked me to do."

"No doubt. But there was something that you hid from me. There was something you did to me that I was not prepared for."

The Chinaman shook his head, and rejoined.

"You have to tell me more about it. I certainly have not the least idea of what you are talking about. I thought that when you left China you were more than pleased with the results of my surgery. You told me that you had remained perfectly ambidextrous, that your left hand was as good as the right. You operated for me and showed me your cleverness. I thought you approved of my work. As I remember, you sent me a present, a set of your medical writings, bound in half morocco. And now you seem to find fault. What happened?"

"Have you any whiskey?"

"Very good liquor, of all kinds."

"Get me some. My nerves are at the breaking point —Ah! That has a kick to it—liquid fire in that decanter."

"That is very old peach brandy. Years ago it was made for my honorable grand-father."

"Lucky for me he did not drink it all. Now, for the story. Explain it if you can. I left you in perfect health and returned to Chicago. I at once started to operate and I was more clever than ever before. It seemed that the rest and the operation did me a world of good. My reputation became greater than ever. My clinics were filled by students from all parts of the world. There were even some Chinamen there."

"I sent them there—to observe you."

"Spy on me; was that it? Perhaps they told you of my ability? But there was one thing they did not tell you, because they did not know about it. After a while I noticed a difference in my thinking—while I was operating. I would keep on planning and arranging for the next step, my mind as usual a few minutes or seconds ahead of the knife. That part of me was working perfectly, but whenever I used my left hand there seemed to be a desire to operate poorly. I did not understand it at first, but finally, I realized that it was not a desire to do poor work, but an obsession to mutilate, destroy, tear and cut and ravish. As soon as I realized it, I became frightened. In my abdominal work I forced myself to use only the right hand, but now and then I would forget and the left hand would take the knife and slash—and then there would be busy, silent moments and rapid work with the haemostats.

"Can you understand what I am saying? Do you see what I mean? The right hand operating perfectly for the cure of suffering humanity and the left hand waiting silently for a chance to kill!"

"But you told me that both hands were under the control of the left brain; that it was there you did all the programme work and that the right brain simply carried the messages, the orders from the other side," said the Chinese surgeon.

"I know that I told you that and my left brain is still in control. At least, I think so. But in Chicago the struggle continued—and at last I knew that it was a struggle between the two sides of the brain—not the two hands or arms, but between the two frontal lobes. *And only one of them was mine! The other you placed within my skull. They fought for the mastery.* But I won. At least for a long time I won. I claimed a neuritis of my left arm, and for months operated with it in a sling. And then my chance came to win the battle. I have told you all this, because I want you to understand. *Do you?"*

"I am sure I do."

"I was asked to perform a simple operation on the daughter of the richest man in my country. I had my left arm tied to my side, with ropes, and then I went into my private operating room with the girl and shut the door. I used local anaesthesia. I was going to prove to myself that my left brain was the dominant one And then the temptation came. I started to operate and all the time the left hand and arm were straining to be free, and more and more I wanted it to be free; so, at last, I took a knife and cut the ropes that held it fast—and that hand of mine—that left hand almost jumped forward and took a knife and decapitated that poor child, and my body, my right hand, couldn't do anything to stop it. That is what happened. Of course, I fled from the country. No jury in America would believe my story. Think of the papers! The headlines. *Peculiar defence offered. Noted surgeon claims this to be a left handed murder. States that the rest of his body was not in sympathy with the hand that used the knife.* So, I made my getaway and I came to see you, because I am sure you know what is the matter with me. Do you?"

"I think so."

"Then tell me before I go insane."

"It is very simple. You came to my house as my guest. I was very kind to you. But during the weeks before the operation you played around my house. There was a little Chinese girl——"

"Only a servant—and only as a joke."

"She was my daughter. What was I to do? You were my guest, and I had promised to operate on you. But I had to have a healthy frontal lobe to replace your diseased one. A criminal was to be decapitated at that time. I obtained his head, and his right frontal lobe is now in your skull."

"A criminal?"

"Yes. He was a really bad man. He was not content with just killing; he wanted to mutilate, destroy, terrify by the appearance of his victims. So, Ong Tong came to a bad end after killing many, many people; but a part of his brain now is your property, and, evidently, it remembered the conduct of its past owner and the frontal lobe of a degenerate Chinaman—need I say more?"

The American looked at the Chinaman. The Oriental continued to scratch the head of the Pekingese dog on his lap.

"And you did all this on purpose?

"Certainly. You will admit that I had to do something—to save my face?"

"I suppose so. Now, let me tell you something. My life is ruined. I cannot open my skull and take out that yellow brain on my right side, but I can keep this poor left arm from doing any more ruin. It has committed murder once, but that is no reason why it should do it again. I am not going to kill you. I ought to, but, in a way, you are right. I suppose I was a cur. But I didn't know it was your daughter; honest, I didn't, Wing Loo. So, this is my final gesture."

He took a long knife, an amputating knife, from his pocket, and with the skill of a Master, he cut off his left hand, and placed it on the table between them, then he fainted.

The Oriental rang a gong. His private secretary answered.

"Our friend has taken the honorable way of escape," Dr. Wing Loo announced. "Take him from here and let his blood flow, as he desired. But place him at once in the cold chamber. The left side of his brain is in perfect condition and so are his right arm and hand. It may be that when old age changes and withers my brain, I shall want to use his brain, for a little while—just for a little while."

The room cleaned, the body removed, Wing Loo sat day-dreaming in his chair. He picked up the little dog and playfully bit his ears.

"And now," he said to the dog, "I can honestly say that I am the greatest surgeon in the world."

THE END.

Cosmic Power

By John C. Dare

(*Continued from page* 35)

drawn the circle smaller and each plane played a heat ray on the sand surrounding the plant.

The heat inside the building was now becoming almost unbearable. Sweat pouring from them in streams, the men began tearing off their clothes.

"Why doesn't the Professor do something?" gasped Smith. "Is he going to allow us to be cooked alive?"

The plane bearing the white flag. Wilson's plane, had joined the cluster of planes over the plant, and the cluster rose a thousand feet higher than the circle below. Suddenly Wilson gave a signal. Every heat ray converged simultaneously on the plant.

Wilson licked his fat lips in anticipation, expecting to see the plant go to pieces, in a mass of exploding concrete.

As the four hundred heat rays converged on the netting, four hundred jagged streaks of lightning simultaneously sprang from the point of contact. Following up the beams of ionized air, which formed a perfect conductor, they licked hungrily at the planes, enveloped them, sprang eagerly from plane to plane. For an instant there was a gigantic wheel of living, pulsing light where the planes had been. An earth-shaking detonation followed. Planes, pilots, guns and bombs exploded under the lash of that titanic force. The taut cables thrumbed like a giant tuning fork, as the remains of the armada rained down in a welter of falling débris.

The thing had happened in a tenth of a second. Just a flash, a detonation and four-fifths of the enemy blasted into eternity.

The planes above the plant, thrown upward by the blast from below, lost four planes in the ensuing confusion. Two collided, and fluttered slantingly down, out of control, to fall half a mile away, bombs exploding as they struck. Two others struck the power cables, and fell into the water.

Cherron, white and shaking from the concussion, climbed to the tower on the roof, where he found the Professor, jaws clamped on a cigar, humped over a long tubular apparatus. It looked like a six-inch field piece, with leads of wire entering the breech. He was watching the planes above.

Three planes left the cluster as they watched and dived toward the plant.

Swiftly three scintillating balls of fire left the tube over which the Professor crouched. Swift as light they sped and with uncanny accuracy, each landed fair on the fusilage of a separate plane.

The planes vanished. Three balls of purple smoke drifted lazily away on the breeze.

Suddenly the Professor seemed to make up his mind. There was no use waiting, or trying to show mercy. Those devils above would fight to the last. With them, it was either win all or lose all.

From plane to plane he turned the deadly tube. Like water from a hose poured the livid stream of fire.

Two minutes of that lethal fire play, and a solitary plane, with a fluttering white pennant, sped away northward, toward safety.

Professor Vondig hesitated a moment, then humped closer over the tube, his jaws clamped tighter, a single scintillating ball shot from the tube, and five miles away Piggy Wilson with his dream of world dominion floated slowly away—a purple ball of smoke.

THE END

The Laughing Death

By Stephen G. Hale

AMONG other meritorious uses that might be found for atomic-driven machinery would be excavators—that is, after we had learned to use and control the energy supposedly hidden in the atom. That suggests a new thought. If all atoms are possessed of this boundless energy, then every grain of sand could be put to beneficial labor. What about the danger involved in tampering with atomic forces? Well, there is tremendous danger in tampering with electricity. Just imagine the help a bag of sand, for instance, would provide in the work of digging and excavating work! But many things might happen—as witness the story our new author has woven around this theory.

It's a corking good story—and different

Duty

IN 1940 I was single and restless, free to roam, to work or to play. I craved change above everything else; if a new experience was offered by a change, I made the change. And thus it was when Joel Murch came to me.

The time is now 1947, six years, two months and three days later, as nearly as I can figure it. I have a family now. Its members fret and scold and sigh for the past. To hold their minds and thoughts to a steady course, I point out the familiar objects still recognizable, the ruins of Temple University on the roof of which some South American condors are nesting, the leaning tower of the old City Hall, the skeleton remains of Wanamaker's, the tumbled walls of a once popular motion picture palace and so on. My words have a negative result. I'm a poor hand at disguising my own longings. When tormented too much, I rise up and say: "Think of me and smile. Six years ago I was a bachelor, shunning all women, and today—" but words fail me. I never finish.

My whole life seems in the nature of a dream from which I'll wake up in some future generation among my friends once more and the old sights and sounds. Death lurks everywhere. Monstrous beasts move about blindly and sluggishly, feeling as strange here as we do. The streets are covered with refuse; they teem with strange life, while overhead sea-fowl blacken the skies.

My burdens are bearing me down. Reason totters at times, perhaps I'm already cracked!

One of our children has just left us—forever! She fell over the edge of the Precipice on Race Street into a Hell thousands of miles deep! Even that doesn't seem real!

I threw myself flat on the brink of that appalling drop, heedless of the hot, scorching sun on my back. Shading my eyes, I peered over. The baby's crumpled body lay faintly outlined in a patch of starlight!

Yes, I may be mad; but it is night on that precipice, night, though the sun beats down on my neck! Bear with me a little longer. Hilda, my first wife, came to me even when a bristling, snarling creature of that Hell below took our child away in its slavering jaws!

"Brace up, Bob," she said. "We can't go on like that!"

Events tread upon one another's heels in our lives; sorrow, joy, labor mingle indiscriminately. Hilda led me back to the Great Benjamin Franklin Memorial in which my family huddle like frightened sheep. The evening meal is being prepared. The odor of the stew floats from the wide portals, as I recline on the steps and rest my head against one of the columns. Hilda is speaking to me as the rest of the family gather in sympathy.

"Mary's nineteen now, Bob," she is saying. "She comes of a hardy family . . ."

I want to rebel at the fate that left me the only man. But I cannot rebel, for these women see the human race imperilled. Ah, if only I had not joined in those fiendish experiments six years ago!

Mary will be my seventh wife.

Illustrated by
MOREY

I had hardly finished when the one who resembled you appeared. The heat suit concealed him almost entirely. What I did see of his face, sir, seemed yours.

The Second Earth

THE Ben Franklin Memorial is our citadel, for in it we find safety and also copies of man's machines and devices with which to remake our lives. The Metal Worm only is missing and I curse the memory of it. We have a radio that receives its power from one of these Worms still operating after the recent catastrophe. This Worm will generate energy for centuries, perhaps forever! Daily Hilda sends out into the thinning atmosphere a message of our location but without success. No one comes, no one answers, we are alone.

Hilda wants to gather together what is left of the race. She is feverish about it and afraid. She wants children, scores of them. If we don't multiply, we'll drift back to savage indolence, we'll care for nothing but the easing of natural wants. The warped and wounded Earth will go to its doom without a human being to ride it there!

"If your friend, Dr. Murch, could be found!" That is her hope. "He knew so much about our machine age. He could teach the children——"

I shake my head patiently. "But we'll not find Joel," I interrupt. "If he is alive, he is out there on the Second Earth. He is battling to live, as we are. I told you that before."

We sit and talk, our eyes seeking the Second Earth swinging lopsidedly across the arc of the heavens. We've been doing that every day with a faint prayer that our vigil might be rewarded by a signal or sign. The Second Earth is a pale orange today. Soon she and the moon will ride rivals, full and bright. Surely the Second Earth must be well lit with her two moons of which our planet is one now!

Mary touches me gently on the arm.

"I'll never forget that day," she says.

"You were a child then."

"Yes, and my impressions are muddled," answers Mary. "Even to a child it was terrible. Mother was dragging me by the hand. There was smoke and fire and steam, airplanes like bees swarming, the ground shaking, buildings falling and streets caving in. My eyes burned from the smoke. People were dying all about me and laughing and laughing while they died. Others laughed with them. How I cried! I hid behind a broken-down wall with my eyes closed and my ears stopped up with my fingers. People couldn't stop, others pushed them on from the rear over the raw bridges and the seething fires. At last I was left alone and I went away from there back to where everything seemed still and safe."

"And that, Mary," adds Hilda, "saved you for our little world!"

The smell of the stew assails my nostrils. My family see my questing glance.

"Dinner's far off yet," one of them offers; and at a hint from another, I am reminded of a task I'd promised to do but which I hadn't started yet. Alice brings me paper, Mary brings me a pen. Fortunately, though we're castaways on a deserted world, we're not without supplies.

I count noses. My brood is complete and peace seems to be upon us for the time being. The story has to be told—somehow! Others would come after us and they'd want to know. And so with a slab of Indiana limestone for a desk, I begin my tale.

I Go with Joel

JOEL and I were boyhood friends. He devoted his life to labor-saving devices for mankind and was happy in doing so; but I was bored because the position I held then was a routine one and tiresome. He came to me one day with no hint of what was in his mind.

"Same thing day after day, eh?" he asked.

"Yes. Why?"

"Do you like it? Couldn't a college graduate do that work?"

"Of course; but I need the money more than he."

"And you have various degrees and other appendages?"

"Say, Joel," and I bridled up, "you needn't rub it in!"

"I'm not," he returned. "I'm merely plotting your future!" . . . .

MY pen is resting. I do not feel impelled to tell the story. I'm thinking of the baby in the maw of the Precipice. A dirty form lumbers by, slowly bobbing up and down. How forlorn a hippopotamus can be! I am cheered. It's waddling toward the Schuylkill looking for water and will find a mud flat instead, for the river is drying out rapidly.

My pen scratches away again.

WE didn't know where we were heading when we started. If I had known, I'd have made away with him and myself on the spot rather than do what we did.

However, we weren't to know: the power of divination wasn't ours. We went blindly about wrecking the earth. The end—we saw it too soon! All the natural laws which had governed this planet for countless geologic ages went by the board! We went about this blithely, happily. What a fool I was! I did it with a sense of high accomplishment. It was something suiting my learning and inclinations, I thought.

Joel's inventions were not many but they were outstanding. He was always trying out new ideas, costing huge sums, sometimes with no returns. That didn't matter. The golden stream poured in without pause. When he offered me five times my salary, I knew he could afford it. When he added a new experimental laboratory which I was to design, I accepted, and very quickly.

"And, Bob," Joel finished, softly, "nothing to do for all this but to play around in the lab, try out theories and hob-nob with me as two chums and bachelors should! No taskmaster, no routine, your hours free as the circumambient air! What do you say?"

What could I say? Three days later surveyors marked off a plot of ground on Joel's country estate near Willow Grove. Busy weeks followed. Cost? He told me to forget it! To wish was to realize. He'd have put in a 200-inch telescope if I'd thought we'd need it! The laboratory went up fast; no mushroom ever grew faster! . . .

MY pen idles again. I pause to remember and to look for my tobacco. Alice and Sid promptly supply the needed articles. The children's shining faces are on me with rare filial devotion and respect. As I look into that small sea of faces, I feel more unreal than ever. I feel like a patriarch or a sachem with all

the wisdom of the ages behind me. For the sake of the children I must go on. I take a long pull at my pipe and push my pen along.

* * *

When the laboratory was ready to be equipped, loaded vans arrived with thousands of books, hand-picked books! Joel wanted researches along certain lines. He didn't say so, but the text of the books pointed the way. I didn't suspect then and when I did, I was already deep in the studies Joel had set out for me. The stage was too invitingly set! I fell naturally into a heaven, a scientist's heaven!

It was the same with the equipment. I ordered generously, too much so. I was lavish. A veto wouldn't have surprised me. There were barrels, packing boxes and bundles everywhere, some opened, some untouched. There was glass underfoot. Joel came in, glanced around and then whacked me on the back until the empty spaces shook with his laughter. After a few words he wandered off, wading through excelsior with a pad and pencil. The results of his visit soon became apparent. Draymen unloaded new shipments, none that I remembered ordering! There was one article in particular.

"A furnace!" I exclaimed. I touched the temperature and pressure gauges. "For making artificial diamonds? If that heat gauge is to be used to its highest reading, we'll have the hottest inferno ever made by man!"

"I hope so," was Joel's answer. "I built it myself and tested it out last week in the old lab. Thought we'd find it useful here."

The next day he moved in with his personal equipment; and when the last workman had left, we plunged into an orgy of haphazard research: if we happened to discuss some idea as we sat smoking our pipes late at night, very likely I'd produce the reaction the following morning or even drag Joel with me through the long entry that connected our quarters with the laobratory proper, and late though the hour might be, go about proving the points of my contention with test tube and Bunsen burner.

Several months passed and I noticed that our nightly discussions in which we took so much delight, most of the time oblivious to the flight of the hours, had drifted into the field of physics and it struck me as odd that Joel, whether victorious or not in these tilts, invariably withdraw for such little sleep as he seemed to require, with a secret sense of glee. I saw this in the merest smile that lingered about his lips.

One warm evening, seized by a common impulse, we walked many miles with arms swinging freely, except when we wished to lend emphasis to some argument. Our stroll brought us into the center of the city; we approached this very building in which we live now, as if drawn to it by the spirit that abode within its walls.

How different the scene here was then! To the east, in front of where I write this, was a rising sky line, one building mounting higher than the other. Boulevards ran in all directions; there were lights, a second Broadway, traffic, life, gayety. I shudder to think what has taken the place of all this! There is no horizon before me, the sky bends down and disappears in that bottomless abyss!

Joel led me to a seat here in Logan Square where we could watch the ceaseless stream of cars circling about us.

Disturbing Thoughts

"BOB, I love this business of transportation," Joel spoke. "The means man uses for getting himself about are ever changing. We couldn't have advanced far without this development."

For a while we were silent, watching the traffic.

"When primitive man," he continued, "first cut out round slices from a tree-trunk and used these for wheels to replace his drags, he took his initial step toward freedom from physical toil. Then it was that civilization was born!"

"What about the discovery of fire?" I asked.

"To tell the truth, Bob," he conceded, "I don't know which came first. It doesn't matter, though, because I still think the same. Today, the United States, with fifteen times more automobiles and ten times more ships in the air than the rest of the world put together, is the strongest power on earth. No one disputes that. Effective means of getting about spell good times and national prestige. To keep Uncle Sam at the head of the parade, Bob, we have to keep improving and speeding up transportation."

"Can we?" I asked. "The average speed is already 400 miles per hour."

"That will be like standing still soon. But speed isn't the only question involved."

"What else can it be? Perhaps you mean space traveling out there among the planets?"

"There is certainly room for development there," he replied. "However that line of progress is likely to be blocked for many generations unless——" and his voice died out in inward reflection. He was looking at the glowing neon lights everywhere, the people, the moving splashes of color that made up city night life without seeing anything.

"What do you mean, Joel?" I saw sadness in his face.

"War, Bob, war!" he answered. "Every generation has had its own conflict. Even now we expect it. Soon the witches' caldron will boil over and hell will be loosed again!"

I couldn't agree with him.

"Suppose there is a war," I said. "It's not all loss: in the Civil War the iron clad was created, the forerunner of today's steel vessels; in the same war, Count Zeppelin, while serving here, conceived his dirigible; in the World War, the airplane received its greatest impetus and there, too, medicine and plastic surgery made great strides."

"All true, Bob, all true of past wars; but the next will be different."

"You mean," I said slowly, "new weapons will be used, poison gases, disease germs, injurious insects, wholesale slaughter in a split second with new rays and the inhabitants of the earth finally driven underground for safety."

"That's it, Bob, that's it! And think of this: when the whole world begins to burrow madly into the ground to live and build cities there, how much time will be devoted to the navigation of interplanetary space? None! Man will have enough other troubles in his new abode underground."

"It seems hopeless," I murmured. "By an unlucky

chance, taken unaware, the whole earth could be wiped clean of the human race!"

"And it's likely to happen, too, unless——"

"You said that before, Joel," I remarked. "Unless what?"

His answer seemed irrelevant at first.

"Last night," he said, "I paid the final bills on the new laboratory and its equipment," and he mentioned the total cost.

I was startled, dumfounded.

"That's nothing, Bob. The profits on my subway digger during the year took care of that. And there's the point, Bob, my digger! In this war I speak of, faster means of digging-in will be needed. Time is short, too, Bob." He lowered his voice, for a stranger occupied the other end of our bench. "War," he said, deliberately, "will be on us at any time!"

"War!" I retorted, too loudly perhaps. "Preposterous! Tariffs and dry laws don't make wars."

His remark troubled me: I looked more closely to see if he showed any signs of illness.

He laughed shortly. "You think I'm mad or joking. I don't blame you, Bob. I wanted to fly down to the Secretary of War several times since I discovered what I know, but the fear of being discredited stayed the impulse."

"You must be wrong, Joel," I said. "I'd have detected the signs. I keep abreast of the times."

Joel answered me tonelessly: "I heard some queer picking sounds on my radio one night. It was a code unknown to me and it came in very faintly. During the war, as you know, my chief duty was to decode the enemy's messages. When the code came through at the same hour every night, I got busy and took the message down on my teletypewriter. Out of mere curiosity I applied myself to the unraveling of the messages. Any secret writing can be solved in time, you know; but this one had me nearly baffled. It was the work of a genius. When I had it solved at last, my fears knew no bounds. It was then that I wanted to rush down to Washington."

"Fortunate you didn't," I answered. "It isn't pleasant to be laughed at by a nation."

"I'm afraid you're right," he agreed with a sudden change of voice.

"It's probably a prank of some college boys playing with a laboratory set," I hastened to offer. It's collegiate to learn Esperanto, write in code, believe in Schopenhauer and his ilk, just as it was thought clever ten years ago to wear a coonskin and carry something liquid on the hip."

"Now, isn't that so, Bob? Funny I never thought of that before. It's a great relief to realize that all my fears have been in vain. . . . It's getting late and I'm tired after the walk. Let's catch the air bus.

Twenty minutes later we alighted at the laboratory in Willow Grove. We lingered near the entry leading to our workship, as if we both had something still on our minds; and the next thing we knew we were again seated in the lab den, smoking.

Getting Ready

"DID you notice," I was saying, "how popular subways are?"

"Yes," Joel was quite willing to talk on this theme. "They're going in for underground concourses, too, wide streets with store fronts doing business under the surface. People find these cool in the summer and warm in winter and never subject to the vagaries of the weather as above."

"Philadelphia's taking bids for a tube," I said, "from Camden to Upper Darby under both rivers."

"I'd like to get that bid!"

"Why?"

"It would give us a chance to experiment."

"You're still thinking of war!" I concluded and regretted having started the subject.

"Yes," he admitted.

"In that case," I said, "we can build that tube to Chester, too; and after that, why not the tunnel under the English Channel?"

I was joking, of course, but he took me seriously!

We conferred through the night. Let him dig the subway, I thought; he couldn't lose, while at the same time this foolish idea of war might be mislaid in the shuffle of events.

"It didn't matter if I did lose, Bob," he argued. "It's a price I'd be willing to pay."

"Well, why not bid on the job any way, and work on the improvement of your digger in the meantime?"

"Good idea!" he said, forcefully, cheered by my words; and though it was four in the morning, he reached for a telephone and aroused the head of a firm of estimators. His instructions were brief after he had explained the purpose of his call.

"Get the lowest cost figures, Rex," he said, "and enter Murch & Co. as bidders on the job for one-half of the cost figures! Yes, one-half! Don't pad the figures, either!"

There was an excited burst of talk from the other end of the line but Joel hung up with a laugh.

"He thinks I'm crazy. Thinks my philanthropy is pointless, wasted. Council is a bunch of crooks, and so on. Pearls before swine! Murch & Co. will get that contract as sure as fate. There will be a protest, of course, but I'll file a heavy bond in the morning."

"You do things in a grand way," I said. "By the way, am I member of this new firm?"

"You are!"

"In that case," I said in a matter of fact voice, "I move that we come to order and proceed with business!"

"Hear, hear!" Joel's humor was now fully restored.

"Since the senior member of the firm has written a huge loss on the company's books, the junior member proposes to list his personal assets at once to help meet said losses."

"The move is not well taken," interrupted Joel. "The junior member is—oh, the devil!" with a change of voice. "We're wasting time, Bob, I stand to lose millions if I depend on my digger in its present form."

"Improve your digger, then!"

"I designed it, Bob. I know its limits."

"In other words," I guessed, "we come to the idea of an entirely new excavator and a new kind of power?"

"Yes"; and he told me the problems the new digger would have to meet. "The ideal digger," he concluded, "would be the one that could complete the tunnel, ready for equipment, in one operation, just as a modern printing press turns out a newspaper or the tailoring machine turns out finished men's suits pressed and ready to wear."

"That would require tremendous power and cheap power, too," I remarked.

We began to talk of the sources of energy and the composition of matter and, as dawn peeked in through the windows and we were sipping some coffee, Joel had brewed in a little closet on the side, we were fully launched on atoms and how they could be torn apart.

"Listen, Joel," I said, standing up and walking the length of the room in my eagerness, "we're entering on a field of thought shrouded in the deepest fog. When we speak of atoms and clutch after the power that is contained within them, we are tampering with forces so immense, so——"

Joel was eagerness, itself. "Where's your evidence for this, Bob?"

"All around us," I replied. "It's been there for countless ages. Astronomers have measured this release of energy among the stars often. Our universe has wandered through the unmapped voids since the beginning of time. Its billions of stars have been sending out heat and energy during that period. Our own planet has never been without the light and heat of the sun. For 20,000,000 years this throw-off of energy has never been stopped! Common sense would tell us these uncounted stars couldn't go on burning forever without being renewed."

"But," asked Joel, "couldn't these celestial furnaces be kept up by the cosmic dust falling all the time and the meteors and comets that go shooting through space?"

I took another cup of coffee to ward off drowsiness.

"No," I answered, "though they do contribute a little. Take the sun, for instance. The temperature on its surface is about 6,000 deg. C. while in the center it is from 16 to 18,000,000 degrees! You can see that the renewal from the outside sources would affect only the surface conditions and those very slightly. No, Joel, the answer lies in the atom!"

"If that's the case," said Joel, "why didn't this breaking up of the atom long ago destroy the planets and stars?"

"That's actually going on," I replied, "but it's such a long process that to set a date even in millions of years would be short of the truth!"

"It doesn't seem plausible, Bob."

"It is when you know the power in an atom. A grain of sand holds within its atoms a force capable of destroying a large section of countryside! Think what that means! An atom's so small it's invisible under the microscope and yet in that tiny bulk is the power to move a mountain!"

"Well, how are you to get this power out?"

"There are two theories. Only one is worth considering and that's the theory of annihilation. We have to break up the atom and release the electric charges. An atom under a super-microscope would be interesting to see: it would show as a universe of tiny planets rushing about, each with its own path. One might even see a glow of electricity, a sort of sun, you know, for the atom world!"

"Bob," Joel broke in, springing up, "lets turn in. There's a firm in Rochester making a new microscope and I'm going up there to examine it." And with an abrupt good night, he was gone.

Signs of Trouble

IN my own room again, I pulled the shades down against the early sun and slept. When I awoke later, Joel was already gone; but he had left a brief note on the breakfast table.

"Double check me," he had written. "Was that stranger on our bench last night Dr. Serge Grubsnig?"

I was startled enough to spill my coffee. Dr. Grubsnig? Vaguely my mind had been grappling with the stranger's identity. That explained why Joel had so suddenly dropped his talk of war and hastened our departure from Logan Square. Dr. Grubsnig was the leader of a secret organization of doubtful reputation; he had not only served a term in prison but had narrowly escaped detention in an insane asylum. His presence in the city set me to thinking. Perhaps Joel's suspicions were not ungrounded. With the name of this learned fanatic drawn into the plot, one might expect any unpleasantness, including even war of a kind.

My fears were soon forgotten. In the absence of Joel, I was besieged by newspaper reporters. They were all agog about Joel's bid. The papers carried big headliners. They were astonished at the lowness of the bid; but not one authority doubted his ability to build the subway, though the political machine, seeing the loss of a plum to an outsider, did raise a brief commotion to discredit him. Needless to say, Joel was awarded the contract.

Still there was no word from Joel. Having received no instructions to meet this situation, I did the only thing a man could do under the circumstances. When questioned by the reporters, I explained Joel's absence carefully and told them that I was not in a position to say either this or that. Of course this made it mysterious. Pictures of Joel, together with his life story, appeared in all the papers.

When Joel finally did materialize, I was greeted with a friendly clap on the back that shook me to the roots of my teeth.

"Great, old man, great!" he exclaimed. "As a publicity man, you have no peer!"

"Rats!" I returned. "I didn't do anything; just kept my mouth shut, looked serious and remained out of reach as much as possible."

"It's an art, Bob, it's an art!"

"Then you want this publicity?"

"It won't hurt; but we'll discuss that later. These men can't wait long."

Four men, burdened with a bulky case, had been waiting quietly. Under Joel's instructions, they placed what I soon perceived was a microscope on the laboratory table. As he told me later, Joel had secured the use of the instrument for a short time from the Rochester firm. Buying it was out of question; it had been built expressly for the designer. If this device were free to be used by the rest of the world, it would extend immeasurably the scope of all microscopic study.

For one week Joel and I hovered about the new instrument. Its magnifying powers amazed us. A drop of water became a storm-swept ocean filled with densely teeming life; a grain of sand was a whole mountain range glittering with diamond-like brilliance.

There came a time when we frankly pursued the elusive atom and those primitive charges of electricity that were to be diverted to man's use. Such preliminary details as cropped up in connection with the subway job, he relegated to my judgment. He failed time after time in trying to divide the atom mechanically. Some other method seemed more likely to promise success.

One day several incidents impinged upon the quiet of the laboratory. I had dropped a tiny set-screw and while kneeling on the floor under the microscope to re-

cover it, I glanced upward. A startled exclamation drew Joel down to me. We traced the stamped letters on the metal with our fingers to make sure.

"Dr. Grubsnig's!" I said, meaningly.

That carried us back to our talk in Logan Square and to the stranger on our bench seemingly absorbed in the passers-by. This time I aired no ridicule at Joel's prophecies, although I still couldn't agree. My mind simply wouldn't consider war. It was, however, a coincidence that the microscope should be Grubsnig's.

We had hashed over the entire evening's events, when I thought to ask a question. "Have you listened in on your radio lately, Joel?" I asked.

His face clouded over. He pushed a buzzer for his butler.

"John," he asked, "did you tune in every night as I suggested?"

"Yes, Dr. Murch."

"Did the code come in as usual?"

"Why, no sir. That first night a signal in code was repeated every ten minutes for an hour as if the operator were trying to attract someone's attention. After that the radio was silent. Thinking maybe that the time had been changed, I tuned in several times every night but with no result."

"Did you translate the message?"

"I'm not a good hand at that sort of thing even with your key, Dr. Murch," the man answered; "but I do think it was about the code being known and that it wouldn't be used any more."

"Thank you, John. Leave the message on my desk. That is all."

When the man was gone, a deep silence fell upon us.

"Another coincidence," I said finally, "that the signals should stop on the night of our chat in Logan Square! It appears now like the workings of some greater minds than those of mere college boys! Perhaps this idea of war——"

I didn't finish. The butler appeared again, quietly, with a telegram.

Something had happened. The borrowed instrument had to be returned by Friday morning at the latest!

"Well, that's the end of that," he said, regretfully. "This man Grubsnig suspects something. . . . We're just learning the fine points of this marvel. We have some photographic records and that's all. Only four days left! It's hopeless! What can we do in that time?"

He leaned against the laboratory table wearily. I was about to speak when Joel gave vent to a cry of pain and sprang away from the table. He had touched a live wire left lying on the table, when I had stopped to pick up the set screw.

"It's nothing," he said. "Just startled me." He hesitated, stared at the wire and gave a shout. "Look out, Bob," he warned, jubilantly. "I'm about to transcend myself! Get the camera. Study the motions of your atom world. Quick! We'll make use of their gyrations yet! Wait and see. That wire gave me an idea!"

Blundering Success

FOUR days with this incomparable microscope! All thought of a scientist's proposed war on the world faded before that fact. The time seemed too short. Joel's joyous mutterings to himself went unnoticed. While he struggled with strange electrical apparatus and, to me, a meaningless confusion of wires, I stared through the triple lenses until my eye muscles ached! I made many motion picture records of my observations, but so far as progress was concerned, I saw none. All that night we labored, neglecting subway details and surveyors' reports. The laboratory percolator did double duty. When the first gray wisps of dawn tinged the eastern sky, I tumbled full length on one of the couches in the corner with a wavering impression of Joel moving an improvised switch board with a tangle of wires nearer to the microscope. I fell asleep with the drumming note in my mind: "Three days! Three days!"

Hours later, the aroma of coffee and of frying bacon in the butler's skillful hands and the bright sun across my couch brought me back to life again. Joel had cleared a section of the laboratory table and, spreading filter paper for a table cloth, was setting up breakfast. We ate perched on high stools, our legs twined about the rungs.

"I'm turning in," he said wearily. "There's an atom, one atom, of sand on the slide of the microscope which I want you to examine. It's hooked up with the high power cable. I worked out the arrangement while you slept. Experiment with it and jot down the results."

He wiped his lips with a piece of gauze and sought oblivion in sleep.

Several hours later I was prancing about the microscope, legs and arms, my whole anatomy in motion, all except my eye, which remained glued to the eye-piece. Joel told me afterward that he had emerged from his death-like slumbers and watched me for a long time in amusement. Inarticulate sounds issued from my lips. Pagan prayers to the various gods mingled with the nameless words. Joel assured me my impatience, when evoked by some cause invisible to him, was most entertaining. Throwing aside his langour at last, he came to my side and scrutinized the switch board and its spaghetti mass of wires.

"Those wires are not in their proper places," he observed in surprise. His face wore a perturbed frown. "They're all mixed!"

"Certainly," I returned. "Who cares? Your hook-up didn't function. It merely disturbed our work. Then some of the wires fell from their sockets and, not knowing your scheme, I did the best I could. In fact," I grinned, "this strand from here to here," pointing, "was not actually on your panel! It was a stray wire on the table and, thinking it had dropped with the others, I found means to attach it in place. But, as I remarked before, who cares? Look!"

I stepped aside. Shaking his head in obvious disgust at my mishandling, he placed his eye in position. Meanwhile, above the hiss and the chatter of the current, I listened impatiently to the astronomers' clock ticking off the half seconds; I tried to curb my irritation, to give Joel a full, undisturbed opportunity for observation.

Fifteen, twenty minutes dragged by, then he called for measuring instruments. The butler appeared with our lunch an hour later. What little Joel partook of it, I fed to him a bite at a time while he continued without a word peering at the atom. Paper and pencil were requisitioned upon which figures rained in profusion. At last he either tired or finished. With a sigh he tore himself away from the lure of our atom world.

"Well?" I asked, simply.

"A foozler's luck, a blundering success!" he returned, frankly. "Between your methods and mine there may be an abysmal gulf, but the two combined will yet bring us out of the night! Why, man alive!" he almost stuttered, waxing excited, "we've practically already done the deed. Let's sit down somewhere and review the miracle."

I felt a trifle chagrined. "Look here, Joel," I objected, "the gulf between our methods isn't so very great. A live wire burning your hand gave you the idea——"

"True, true," he admitted. "I take it all back."

In an alcove lit by soothing green lights we went carefully over the history of what we'd done. We checked off each step, figured values needlessly to eight decimal places and made sketches and diagrams. Several times we made sundry tests of our sanity. We feared, too, that we couldn't long refrain from our impetuous desire to shout the news from the house tops, to write of it to the learned societies, to send transcripts of it to the scientific journals. Nothing could have been so disastrous to the safety of the world.

"Let's see," Joel was saying for the second time, "you reported failure of my arrangement, then you deliberately mixed wires—or it amounts to the same thing—selected them probably by closing your eyes and reciting *eenie, meenie* and so on. You threw in an extra one just because it happened to be lying under your hands and lo and behold! the trick's done! Or nearly so. You've sent a tremor through our atom world! The atom was on the verge of being wrecked! As it is, you've probably started its transmutation into some other element! Ye gods, man, we've got it! We've got it!"

He threw his papers toward the ceiling and stood blandly smiling under the white shower.

"No," he said at my startled backward step, "I haven't gone insane—yet! It's just celebration! I'm just being exultant, gay and so on. When young, dry old fogies like ourselves do break out, we do it with a vengeance. Why, Bob, we've opened up the atom, sliced it wide open. You were right. It's a little universe, with a central sun, planets, stars, asteroids, all, even nebulae! Did you notice that pink haze on the outer fringes? How it swirled and changed color?"

I reached out and seized him by the arm.

"Put your brakes on a minute, Joel," I beseeched. "It's exciting, I know, and fascinating: a strange lure seems to hold one to the eye-piece, a sort of psychic gravitational force. I seemed to be drawn irresistibly downward as if from a great height toward that atomic sun! But, Joel, let's be calm. There's no use acting prematurely like a pair of crazy loons. We nearly sent these primitive forces off on a tangent but not quite. We have to remember that!"

"Bob," he replied, gathering up his papers, "I feel confident of the solution. We can't expect to duplicate the conditions in the sun; but by the use of the furnace with which you thought I planned to make diamonds, we can—well, we'll see!"

By the end of the evening meal he had produced a definite outline of activity. A heavy, heat-resisting metal cylinder was encased in a larger container of very thick steel. Into this Joel introduced a number of atoms to be fed into the chamber proper by means of a spring and valve of minute design. Once a drop of perspiration from my forehead drowned out two hours' work!

There were moments before sunrise when I showed myself to be completely out of my mind. I recall moving all our equipment to the great furnace and of cutting atoms, but all else is hazy. Joel was a sweating ogre to my weary eyes, the astronomers' clock sounded like an infernal anvil as it measured time monotonously. My reeling mind had found a new refrain: "Two days! Two days!"

When I awoke, Joel, I found to my surprise, had chartered a plane and gone away with the microscope, to the factory, as it developed later. A note contained brief instructions for me: I was to turn on the current for some minutes, turn it off and observe the results.

I asked myself several questions as I moved the switches. Would one atom set off another, as a string charged with gunpowder will burn rapidly from end to end? And what about the energy generated? I sprang across the room and out into the entry, stationing myself behind the heavy oaken door and keeping it open just enough to see into the laboratory.

What would the the outcome? I waited, excited, of course, but with no special fear. Minutes passed. The pressure in the furnace mounted higher. The hiss and chatter of the current became faintly audible. There was a muffled roar, a tremor ran through the building: the noise continued to swell in volume while the temperature in the whole laboratory mounted rapidly. Then I remembered Joel's last instruction. I was nearly half a minute late. I raced into the room and threw the main switch but the uproar didn't stop. I noticed now that the dying atoms were generating electric current and that there was already enough to supply light for the entire building.

The report which I composed for Joel was brief. There wasn't much to write. I spent a long time afterward lingering and listening, but even a miracle will pall in time and since the set did not need my attention, I turned to other duties, among which was the making of arrangements for the ceremony to mark the breaking of ground for the subway.

Saturday afternoon Joel returned with much clatter and noise. The success of the atomic machine did not surprise him. He listened to my report and agreed with the entire program. I had detailed a gang of workmen with several of his old type diggers to start the excavation after the ceremony.

The Metal Worms

"THAT'S right, Bob," he approved. "We'll have to use them to sink a shaft to the floor level of the subway before we can put our new outfit to work." He enjoyed my surprise, then walked to the nearest window. "What do you think of the new equipment?"

There were six cumbersome looking affairs on wide caterpillar treads adorning our driveway.

"They scarcely suggest diggers," I replied.

"No," he answered, "because they're really not diggers."

He led me out to the lawn for a closer inspection.

"These were pushed through the factory rather hurriedly," he said; "but then atomic machines will never be complicated or hard to construct. About three weeks from now, if you like, you may arrange for a party of reporters to ride with you on the first passenger coach to go through the completed tube!"

My eyebrows went up and I said something in slang.

"Ten miles of subway in twenty days!" I added. "Really that's too much to swallow!"

"Wait and see," he retorted, smiling. "They weigh eighteen tons each." He came back to the atomic diggers, "and they have just a few moving parts. One of these, filled with ten buckets of sand, our new fuel, would dig a tube three times around the Earth! I don't intend to build any more of these. The plans are already burnt. Too dangerous, Bob."

I agreed. "But the machines will be copied unless——"

"Impossible. Tampering with them will destroy them. As I said, these are really not diggers. The earth will be pushed back by the pressure of the exploding atoms and burned and fused by the terrific heat. The tube will be lined with a shimmering, smooth, rock-like fusion of great thickness and strength, waterproof, too. No brick, tile or concrete lining to pay for!"

"What a pipe dream, Joel!" I said; but my heart pounded with anticipation.

"One atom," continued Joel, unmoved, "will break up the next and so on. By tapping the surplus power I confine this spreading destruction within the desired space. Each machine will trail a heavy cable and the extra power produced will be sold until we can use it ourselves. If the cable were to break, the free escape of power would grow and, like dynamite, would go on forever, finally imperilling the entire planet!"

"That's not for publication, of course!"

"No, but tell the papers the subway will be a half circle in shape, 200 feet in diameter and the floor 150 feet below the street level. Only one Metal Worm, the new name for my digger, will be used in digging this tube."

"What about the other five?"

Joel gripped my arm suddenly.

"War!" he whispered. "It's coming, Bob. The tube we're building will hold over two million people. I'll dig more tubes. The network will make a complete city underground."

The Underground City

HE led me about the lawn. I was astonished to see men stationed on guard in hidden places.

"I was the object of a machine gun attack yesterday," he said quietly. "I had a threatening letter from Grubsnig, too. He knows we've had his microscope in our possession!"

"Did you notify the police?"

"Yes, but what can they do?"

On Monday ground was broken for the subway. When the ceremony was concluded, our men swarmed over the scene, the old diggers scooped up the earth and work was under way.

Wednesday morning saw the lowering of the first atomic machine into the shaft. It was started on its long task, how long a task none knew just then. We were hoisted out of the shaft; the entrance was covered except for a small opening through which ran the cable to carry off the surplus power. This cable was to be unreeled from a giant spool as the Metal Worm advanced. A group of special police were stationed to watch the spot, though this seemed needless: there was nothing in sight to attract the curious.

Despite this, trouble did come. Attacks were made on the tube. The laboring bodies protested the undertaking of this huge public work without human help. When informed that later thousands of men would be required, the disturbance quieted down. No harm was done, but the guards were increased.

The Metal Worm did well. Its rumble, like that of an earthquake, could be heard faintly above the traffic. Its progress was rapid. Continuous running finished a mile of subway in the first twenty-four hours and we were satisfied. We weren't going to lose on the contract after all.

Meanwhile shafts were sunk on five widely separated spots. One Metal Worm was placed in each, pointed toward Logan Square here, fueled and started. Joel showed me a map of the entire program. Like spokes of a gigantic wheel, the red lines radiated from the Square to Hog Island Airport, Chester, Media, via Paoli, Norristown and Langhorne in Pennsylvania and to other towns in New Jersey.

"This network," added Joel, "will drain the most populous centers around Philadelphia."

When the first mile of the main tube had cooled, its equipment was rushed along. Newspaper scribes from all over the world were there to write about the wonder. New composition rubber rails for the monorail passenger coaches, girders of rustless steel, great slabs of rubber for paving purposes—for Joel was bent on eliminating all needless noises—and other material was dumped on the scene as if by magic. Men worked like sweating gnomes in the cyclopean cavern under the city streets.

Joel and his engineers had decided upon a great deal in secret. "Our plans are so apart, so removed from present day practices," he said, "that the public must learn only gradually what we are doing; otherwise we shall be dubbed insane or as visionaries!"

His shop sketch showed a real city underground. Freight and passenger lines, warehouses, stores, factories and sewers were confined to the basement floor; three story homes and apartments, schools, churches, libraries, gardens and playgrounds for young and old were concentrated in the floor above; and on the topmost floor parks, open spaces and a clear, cold stream for aquatic sports were to be found, all lit by diffused, artificial sunlight, making plants grow just as green as on the surface above.

Everything was to be most modern, fireproof, noiseless and ideal. Private vehicles were banned to save space and maintain the pureness of the air. Moving about of people, parcels and freight was all to be done by electric trains, conveyors, pneumatic tubes, moving sidewalks and swift elevators. Everything was to be electric. In time of war, parks and open spaces were to become intensively cultivated farms.

Hostile Moves

I WAS lying in bed one morning luxuriously twiddling my thumbs in time to the radio setting-up exercises when my door burst open under the violent impact of Joel's body.

"It's started, Bob!" he cried, shaking with excitement.

I sat up. "What's started?"

"War, Bob, war!"

I jumped out of bed and reached for my clothes.

"The Associated Press has just sent me a message over my private wire," he said. "It states 40,000 acres

of wheat in the Dakotas are being ravaged by hordes of new insects that fell during the night!"

I became calmer.

"But—but where's the war?"

"Oh, get that atrophied mind of yours working! It's the first move. Remember those radio messages? Destruction of the world wheat crop, then the corn crop, was to be the first threat to civilization."

"But, Joel, these insects may be Japanese beetles or something of the sort. A perfectly natural occurrence recorded by history many times before. Of course, I admit it's a coincidence," and I went on dressing more slowly.

"Let me finish." Joel tried to hold himself in. "The report states further that the farmers found a shower of cards had fallen with the insects, neat cards with an engraved message on each."

"Well," I asked, "what was the message?"

Joel read it off:

"WARNING!
A NEW ALLEGIANCE!
WORLD CITIZENSHIP!
Call our sons home from
military service!
SERGE GRUBSNIG."

The papers were full of it that day because the event offered new material for the nonsense columns. The afternoon editions, however, brought out the announcement of a similar event in the far Russian wheat lands. Public comment assumed a more serious vein. Obviously the Soviet Union was not back of these outrages.

Joel and I were rather busy these days, what with checking the Metal Worms, making contracts for supplies, rushing hither and yon, receiving reporters and construction engineers and taking care of the other tasks that come to those at the head of such a project as ours. I was waiting for the Philadelphia-New York plane to empty itself, when Joel himself climbed out of it, nodded in passing as I climbed in and handed me a slip of paper.

"Keep it," he said. "See me tonight."

The note read:

"My dear Dr. Murch:
You are too late with your atom
and your subway!
Serge Grubsnig."

I saw Joel transferring to a Washington plane, evidently bound south to interview the federal authorities. At the next airport, Trenton, I boarded a return plane, with my plans changed. A talk with the police-head followed. Prompt cooperation was given, the police short-wave radio set in motion the machinery of the nation's police forces, pictures of the mad scientist were transmitted by telegraph; but it soon became evident that not a single trace of their party, whose haunts had never been well known, could be found.

"It's all in vain," Joel mourned that evening. "We're too late! He'll elude capture. He has prepared against that possibility. I was in Washington today. The Secretary of War was courteous but didn't consider the matter drastic enough; then this press dispatch came in and now he's worried, too."

Somewhere out on the grassy planes of Brazil, thousands of beef cattle were being lost by a malignant disease that first sent the peaceful steers into mad fits, then dropped them lifeless in their tracks. Later news dispatches indicated that cattle were going "berserk"* elsewhere over the face of the globe, wherever beef was grown on a large scale, including our own western ranches. In all of these instances, engraved cards were again found containing the message now familiar to every one.

"It's not our burden," Joel said. "We've warned the police. It's up to them. Our work lies elsewhere. I'm changing by plans tonight, Bob. Have to. The people must get used to underground life as soon as possible. The tube from Media is finished. A thousand men are going below to lay the tracks. The main subway from Camden to Logan Square has its trains and crew ready. We'll start service tomorrow at a very low fare. The houses and apartments are going up fast, a score or more are already furnished. We'll offer these for lease for one half surface rents."

He consulted a little pocket notebook.

"The atomic machine in the main tube," he said, "will reach its western terminal point in about an hour. The fuel in the supply chamber was carefully calculated, the machine will stop automatically. Time's precious; we ought to refuel the machine. Come, let's go."

At the Main Shaft

JOEL'S tireless vigor carried him on in this fashion. I could but follow.

"What about the heat?" I asked. "We can't go in there while it's running."

"I'm going in alone," he answered, "and I've provided for a way to shield myself from the heat."

At the mouth of the main shaft here in Logan Square, the special officer in charge was agreeably surprised to see Dr. Murch.

"Back so soon, sir?"

"What do you mean so soon? I haven't been here since yesterday!"

The officer smiled. It was a new pleasantry of the great man's; or perhaps it was absent-mindedness, or just a test to try him out. He continued to smile in a reserved way.

"I tell you, Captain Gardiner, this is my first appearance here today!"

"But, sir, you were here just ten minutes ago!"

"I've been away to the Capitol," retorted Joel, shortly. He disliked nit-wits. "Returned a short time ago, flew straight through to Pitcairn Field at Horsham without stopping off here. And there is the windmill plane in City Hall Plaza still from which I just alighted."

"This is embarrassing, sir," the officer replied. "I don't know what to say, sir."

"Have you been drinking?" Joel stormed.

"No, sir," the officer was palpibly frightened. He pointed with a shaking finger. "You posed right at that spot in your new heat-proof suit at the request of the newspaper reporters, sir."

"There's something wrong here," cried Joel.

"Yes, sir; I think so, sir," replied the officer. Then he spied someone in the passing theatre throngs. "Just a minute, sir," and he was off, dodging nimbly through the heavy traffic stream. He was back almost at once with a newspaper man carrying the large, characteristic box camera.

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* A form of almost insanity, attributed to old time Scandinavian warriors, when they fought recklessly for a while, and later relapsed into weariness.

"I presume," Joel barked, "that you're the one for whom I posed a quarter of an hour ago? Yes? Well, I didn't! Get whatever plates you exposed developed and hustle them promptly to the chief of police. I'll meet you there. Don't linger on the way. Better still, take the plates right over and have the police develop them. And now, Captain Gardiner," turning to the unfortunate officer, "*who* was he?"

"Sir, I do not know." The Captain stood straight and stiff as if awaiting a death sentence.

"Well, tell me about him. Did he look like me? What did he want? What did he do? Don't stand there wasting my time!"

I had never seen Joel so angry before. Overwork tended to make his temper brittle. Who knows, too, that he didn't suspect the terrible thing that had happened? I think he had caught a flashing glimpse into the future to which even then I was blind. I don't know. He never told me and I never asked.

The officer spoke timidly at first. As he went on, however, his voice became firmer. Still I was troubled by a lost, hopeless look in his eyes.

"There isn't much to tell, sir," he said. "You confided to me yesterday that a heat-proof suit your engineers were devising was finished and that it had tested successfully. You intimated, sir, that sometime this evening the suit would be brought down by some of your men. I was to have it in readiness in the unfinished passenger station here under our feet. You planned to come here late tonight, you said, for a trip to the western end of the tube."

"I think," Joel interrupted, "we were standing by that pole where the bus is stopping now?"

"Yes, sir." The answer was a toneless one.

"And there was no one near us?"

"No one, sir—oh, yes, there was!" he remembered. "It was a newsboy."

Joe nodded. "I wanted to be sure," he said. "A hunchback, rather old for a newsboy; sallow face, ugly."

"Yes, sir."

"Go on with your story."

"I remained on duty this afternoon to receive you myself. The sergeant and I ate supper here together. We were just finishing when an officer in a uniform similar to that of your personal guards alighted from the local autogyro plane from Willow Grove and accosted me with credentials and instructions in your handwriting."

"Where are they?"

"Here, sir," producing them.

Joel studied the papers. Finally he passed them to me.

"Good forgeries," he said. "Go on."

"The instructions advised me that you were due for your intended trip underground at any moment; that you were coming in a private plane and bringing the suit with you. I had the casing over the shaft removed, the elevator brought to the surface and so on. A group of men stood below to render you any help that you might need. I had hardly finished when the one who resembled you appeared. The heat suit concealed him almost entirely. What I did see of his face, sir, seemed like yours. His aid was carrying a heavy bag of sand. Both nodded and the aid said something about your having decided to refuel and carry on. That sounded natural. I went with them in the work-car. The leader couldn't speak on account of the heat suit and the aid on account of a headpiece and which I presumed he meant for use in keeping in touch with his superior. They departed promptly by an autogyro plane which had waited for them on the Parkway lawn before the Cathedral. . . . No, sir; sorry, I didn't notice the license number on the plane."

Joel grunted.

"Is that all, sir?" asked the officer.

"Yes."

The officer turned smartly with a click of his heels.

"Sergeant Hottinger," his voice rang clear, "take command!" and with that he stepped into the work elevator with not a look behind him.

"Joel," I spoke in a low tone, "Captain Gardiner's a clean cut man. His profession is his life to him; and he has failed. He is hurt. His pride's down. You know how it is. It wasn't his fault. Anyone might have been deceived in like manner and you were unrelenting. Couldn't we go back——"

Joel's calmer nature came to the top. We both made for the work elevator. "I'll put him in charge of the entire job," cried Joel; and then: "I'm so very tired, Bob!"

When we reached the head of the shaft, a great clamor echoed up to us from the black hole. Captain Gardiner was not in view and the elevator was still in place.

We found we'd been a little late. They brought the officers's body up, and we stood with the crowd that had gathered. His profession had indeed been his life to him. Without the one, the other was worthless.

"Bob," said Joel, "I'm going home. If you're able, find out what it all means," and he mingled with the moving throng and was gone.

The Unleashed Terror

I CALLED Sergeant Hottinger. "There are questions I'd like to ask," I said. "Did those two men refuel the Worm?"

"They came out without the bag of sand, sir," he replied. "It's after midnight. The Worm should have been done a half hour ago. I'll call." He stepped into the field office and called the western end of the tube, then beckoned to me and held the earpiece for me. I could hear the muffled roar of operations still going on. The sounds seemed louder than usual. "They are," the guard agreed. "The chap at the other end is worried."

"Well," I said, cheerfully, "Dr. Murch planned to extend the tube anyway. We've been relieved of a hot task."

"But, sir, may I remind you that the heat suit is gone?"

"That's so."

"We'll take the wearer into custody, sir, if he shows up."

"Correct. By the way, do you know what this surplus power cable is for?" I asked, touching it with my foot.

"It draws off the extra power, sir. If it didn't do that, the Worm would sort of run wild, set fire to the ground, sir."

"Any harm in that?"

"Yes, sir. In time it would spread and destroy everything, like dynamite."

"What's the speed of the cable?"

"Five feet a minute, sir."

I didn't wish to startle him too much. Captain Gardiner's case was still painfully fresh in my memory.

"But," I said, quietly, "the cable isn't moving!" I laid a restraining hand on his shoulder. "Take things coolly," I advised. "If the cable is broken, it can easily be mended."

"Not so easily, sir, if the break is near the Worm. We haven't the heat suit, sir."

Again he called the western end of the tube. When he returned, his face was pale.

"Sergeant Harr reports, sir," he said, "that the cable has been disconnected from the digger."

"How did he find that out?"

"Flood lights from the top of the shaft, sir. The couplings are lying right at the east side of the shaft, sir. That would make it just about the time those two went down, sir."

My worst fears were realized. The Metal Worm had been unleashed. I repeated my misgivings to the police head, but such matters were beyond him. The reporter's pictures had revealed nothing of value. Fliers were sent out for the hunchback of whom Joel had given such an apt description. Eventually the hunchback was dragged into one of the local police stations but before any facts could be extracted from him, he had passed out from a self-administered dose of poison.

With Joel unwell and secluded in his quarters, the storm of detail again centered about me. For hours I sat beside the telephone. Police on their beat called me frequently. Complaints were coming in that sleep was impossible in West Philadelphia. Windows rattled in their frames, lights flickered, the very house foundations trembled. The collapse of a row of old houses added to the din. What was about to happen?

Toward dawn I found an engraved card on my desk. How it got there I don't know. I must have dozed. It was from the mad scientist and at the bottom an extra line had been scrawled in a heavy hand. Its message was short:

"Apologies for letting your machine run wild;
but I did not know how to destroy it!"

"What an ironic sense of humor!" I thought and sent the card to police headquarters. The handwriting might help.

New Evils

IN the morning such tubes as were ready were opened for service. By noon I was convinced a half million people would patronize our lines that day. I rode in the first coach to Seventy-fifth Street where the last mile of rails were actually just being set. Beyond was the extension of the tube which the runaway Worm was digging. The tube was being gradually enlarged: the floor was dropping down, the side walls were receding and the arched ceiling was rising higher. Where would this end?

The new underground ways were immensely popular, especially with shoppers. A spell of hot, humid weather was driving many more under. In the very first hour after the opening, one of the houses had been leased to a writer desiring quiet! By the end of the day fifteen had been hired, all under the Delaware River. People were taken with the novelty of it.

Meeting the chief housing engineer at the Paoli division, I was informed that the schedule had jumped to 200 completed houses per day! I ordered the hiring of more men. I wasn't satisfied. The rail manager announced that the Pennsylvania was building shuttle lines to connect with our tubes.

"Well," I quite astonished him, "what's the matter with the Reading? Go after it, too!"

The opening of a subway was no longer an event. As fast as mileage was laid, it was thrown open to service. Money poured in. Surface traction companies started litigation; but our legal staff interposed obstacles and delays. The State Governor helped in this. Matters shaped up well. I finished my tour and flew back to police headquarters for the latest news.

I found the devastation of the wheat lands was spreading; cattle were still being decimated and food prices were soaring. A new threat had appeared. Suddenly the farmer's greatest enemy broke all bounds, here, there, everywhere. A strange, shaggy weed grew like wildfire, choking out all useful vegetation and wherever this seemed to have had its start, the usual cards were found. No one could suggest a means to combat this latest invasion.

"This war of yours," the police chief remarked, "is a devilish, queer kind of war. When will the people be attacked directly?"

As if in answer, the police clerk came in with a cable from London. The news had been repressed for some time; but finally it had leaked out. The English Parliament had been in the midst of a night session, voting on the appropriation of thirty million pounds for the construction of a new naval program. The vote was never completed. There wasn't a soul who could afterward render a coherent account of the incident. An invisible pall had settled over the Houses of Parliament, over the grounds nearby and over the Thames. Lords, commoners, boatmen, vagrants, guards had succumbed.

The victims of this silent attack came to life again, but England was confronted with the strangest problem in the history of any nation. It was suddenly bereft of its law-making bodies; it was without its legislative head. The speakers of the two houses awoke and stared vacantly at the engraved cards that had come mysteriously into their hands. The private asylums of the country were quickly requisitioned to receive the afflicted. From street sweeper to lord, memory had deserted them; the past, with its burdens and its problems, was forever the past for them; they were as children in men's bodies!

The political malcontents surged into London and seized control. Chaos reigned. The British army and navy were slashed in half. Enlistments stopped.

Some thousands of miles away, the United States Cavalry had been trekking painfully in a practice march across the deserts north of the Rio Grande, and making as good time as could be expected in the deep and yielding sand when a like fate overtook them. An air squadron, sent out to pick up the men wandering about dazedly over the sandy wastes, was itself brought down by the same evil vapor!

A Mexican revolution was nipped in the bud in the same manner. Then London received a second visitation. In the midst of wild celebration and while a Red army was being mobilized on the spot, the pall descended and blotted out the past for them all.

And so it went on, this tale of vengeance from the air. In India, punitive forces in a salt riot, were overtaken by the deadly wave; a secret army forming in Japan abandoned its objective; elsewhere, a vast throng

honoring a modern Caesar and his dreams of empire were scattered like lost children. In a short number of days, the world's armed forces had been reduced to a shadow of their former strength.

Numbered Days

THESE occurrences were far from our city. Joel, about again, accepted each outrage stoically and plunged once more into the worry we shared equally. Every other problem, the tubes, housing, heating, transportation, etc., had been handed over to our growing staff of engineers. People were moving into the new homes slowly; but when the dreaded gas cloak, feared more than death, at last found out our city and settled upon a patriotic parade on Broad Street, making several thousand its victims, the whole city and the city's business made a mad rush to get underground, where good weather and safety prevailed at all times.

Freed of all other duties, we lived practically in the air, flying back and forth from the laboratory to the western end of the main tube. Here the fiery terror was boring through the bowels of the Earth with fiendish haste. During the first day of its freedom the digger behaved normally, cutting but one mile of tube. We still worried, however.

"If," said Joel, "that machine has been fueled to capacity, it will run on like that for 197 years!"

"It would be the eighth wonder," I answered, "a subway three times around the Earth!"

On the second day, the Metal Worm had cut three miles instead of one; on the third, it had reached six miles; on the fourth day, ten miles, on the fifth day, it was at Downingtown, fifteen miles away.

The city mayor, Joel and I were together when the surveyors brought in the last report. Our faces were blanched with fear. We spoke in whispers without knowing it. Joel's hand trembled as he made substitutions in an equation. When the answer was ready, he faltered.

"Utterly impossible!" he said at last. "Fantastic! It can't be! Our days would be numbered!"

We studied his calculations and found them to be correct.

"You're meddling with celestial forces now," I warned. "Nothing is impossible! And think what this means! No matter how much or how fast the Worm plunges onward, its energy will not be exhausted, as you said, for nearly two centuries! However, we don't have to worry about that distant date!" and I laughed shortly. At last I'd caught an inkling of the end.

The mayor didn't understand.

"Is it really true?" he asked Joel. "Will it really have dug its way to the west coast in a month? And——"

"I'm afraid so. Bob's right. My fear wouldn't let me admit it. The Worm is using no extra fuel. It's a spreading action, faster and faster every day," said Joel.

"Gentlemen," the mayor spoke with decision, "there's just one thing left to do. We'll have to stop that machine somehow!"

It was Joel who laughed this time.

"Can't be done," he replied. "It's forever beyond human control. My heat suit's gone and with it the possibility of making another."

What could we do? Wait, wait and hope.

On the sixth day, the tireless monster was at Lancaster, on the seventh, striking to the south a trifle, it passed through York, destroying a mile of city streets and buildings. At this point the subway had emerged as an open cut. The terrific heat thus liberated attacked everything in its way, burning farm crops, virgin forests and such structures as happened to be in its path. Roaring infernos trailed its progress through valley, mountain and plain. It had long since ceased its usefulness; its path was a barren waste, a searing gash across the land. Airplanes flew ahead, warning the people and thus lives and some property were saved.

We no longer journeyed to the tube's end. Such trips were useless now, even dangerous to us. There were those who held us to blame for having loosed this fearful menace. I began to wish I'd never taken up with Joel's experiments.

By this time, the Worm had ripped its way through several mountain ranges and was heading through western Maryland. Panic seized the people and the press demanded more information from us.

Joel strode up and down the length of our den in a mounting frenzy of fear and foreboding.

"We'll have to tell them," he groaned. "What will happen after that——"

He shrugged his shoulders as the door opened to admit the representatives of the press. They saw by his face that the tidings would be of the worst.

"Boys," he said, "use your judgment. Think of the results!"

"Some fools," one of the reporters spoke, "are going about making wild statements that the days of the Earth are numbered. If——"

Joel held up his hand. "They *are* numbered, though none can tell the number." He passed his sheet of calculations over for their enlightenment. "In less than two months, as you can see by the figures, the Metal Worm will have gone around the world and further. By that time the gash will be over seven miles wide, over three and a half deep. It will swallow whole cities and towns." He strode away from them, heaping low curses upon the one who had launched this remorseless weapon against our planet.

"But," another said, "what will happen when the Worm reaches the Pacific?"

Joel waved his hands in despair.

"How do I know? If you expect the ocean to extinguish that digger as it would a fire, it'll probably not do it. Remember what happened to the Susquehanna?"

The river had been drained and the water had vanished in vast clouds of steam. The Susquehanna Valley seemed doomed.

"You must have an idea, Dr. Murch, a rough idea——"

"Look at your figures again," Joel interrupted. "Three months, four or five and the Earth will have disappeared! It's like cutting an endless peel from an apple—the Worm will finally lunge into space after it is through with the Earth and we're not concerned with what happens after that!

"Think!" Joel begged, "the deepest man has ever penetrated the Earth is less than a pin scratch on this sphere," pointing to the globe in one corner. "He has released heat, steam, gas and death! What will happen in three months when the Worm will be digging many miles into the Earth or even before that, in case it suddenly changes its direction and dives downward toward the very core of our planet? You may expect

upheavals, earthquakes such as man never experienced before, volcanic eruptions, tidal waves, storms—oh, I haven't the words!" and he plunged out into the laboratory and resumed his tramping.

"Gentlemen," I said, seeing the reporters to the door, "the earth may still exist two or three months from now but we'll not be around to witness the fact!"

Joel Acts

IT was at this time that an American physician found a cure for the effects of the vapor that made imbeciles of men; but the task of curing the afflicted promised to be interminable—there were so many new cases. Finally the more powerful nations mobilized such military forces as still remained and with these strove to cut off the sources of certain chemicals, in this way hoping to thwart the enemy in his manufacture of poison gases. A division of American infantry, assembling at Camp Dix, New Jersey, for this purpose, was attacked on the second night by a new menace, a greenish cloud that sank and clung to the ground. That night 40,000 men started to laugh as men had never laughed before. It must have been a ghastly sight. Even in death from exhaustion which followed, this insane mirth contorted the facial muscles into horrible masks. The same green vapor visited the other nations and a great shudder ran through the world. Men shunned military service; military discipline melted.

Foreign engineers inspected our underground city, returned to their homelands and began projects of their own, much, much smaller and by the old, tedious and expensive methods.

"Theirs is a vain task," I commented. "They need help. Why couldn't we build a few more atomic machines, Joel?"

He started up from his desk where he had been brooding. He was almost angry—and scared! I knew at once that we would build no more Worms.

My question stirred Joel to unexpected action. Today, as I write this tale, I feel my burden lightened a little for having been the indirect cause of this. That very day orders were issued for the sealing in of the Metal Worms forever, each in a structure with walls many feet thick. Mighty towers were erected and reenforced against earth tremors. A large fuel chamber had been added to each Worm to hold many tons of sand. The rocket tubes were closed and the machines became power producing units instead of diggers.

"That settles that!" sighed Joel. "Human hands will never touch those machines again. Power will come from them, transmitted through the air, for thousands of years, for eternity, as far as we're concerned. Some day during the coming ages man, if one of his type is left, will need it!"

It was a prophetic utterance and today I live to realize it. In time it may prove our salvation, this power coming from the air.

The papers came out suddenly in special editions over the entire face of the earth. The reporters had decided. Page after page was devoted to Joel's predictions and to such news of mankind's suffering that came of the war of one man against the world. Strangely, no authority, no university, no government doubted the outcome.

Panic and resignation reigned side by side. Public and private business dwindled, transportation was disrupted, food supplies were delayed, people starved. Pestilence was eating away resistance, destroying courage, changing men into savages wanting to live a whole life in the despairing weeks that were left.

The Metal Worm had plunged down into the earth near the Mississippi; in New Mexico it had emerged only to disappear again under the western mountain ranges. Railroads, highways, communities were divided forever by an unnatural canyon that grew ever deeper and wider.

The passage of the Worm under the bed of the Pacific was the forerunner of disastrous earth disturbances. California was rocked by a 'quake, cities fell in ruins and millions of their citizens died. In the lower peninsula, tidal waves swept over the narrow strip of land and carried away the flimsy evidence of human habitation. Pilots of trans-Pacific air liners veered from their usual lanes to avoid the sheer banks of steam that the ocean spumed up. Later a wild call for help by wireless from Honolulu, a vain, heart-rending call, was silenced as the sea opened up and sucked in that city and the whole island group.

In Person

THE mourning nations had been put on a wartime ration to ward off immediate starvation. Joel and I had not the desire to eat even the sketchy meals allowed us. The sound of hideous laughter, the groans of the dying, the prayers of the hungry were always with us. The point of living was out of our lives. We strove, we gave, we planned but our efforts were slowing down. The world was falling away before us.

Sweeping across the Pacific, through Asia and then Europe, the metal monster we had so proudly created left a trail, the horror of which man could never survive. In consternation I saw a similarity between the trembling and shaking of our Earth with the shuddering of that atom world we had viewed through the eyepiece of the microscope. Like that atom world, our planet, too, was doomed.

Navigation of the Atlantic and tributary waters had stopped. The ocean boiled in, mad, frothing, flinging the scalding waters high in the humid air. Frogs of superheated steam rolled over land and water. The New Atlantis, the floating airport city, midway between Europe and America, fell, drawn in by a maelstrom of furious waters. The sea along the New Jersey coast seethed in rising heat. The Metal Worm was coming back!

"We're going backward," said Joel, "backward to the age of steaming swamps, a slimy world of scorching heat, torrential downpours and everlasting fogs."

The thermometer was registering a torrid, suffocating fierceness that parched our throats. Our windows were wide open upon City Hall Plaza but only a faint enervating stirring of air came in, the fevered breathing of a dying planet!

I was growing impatient. We had been summoned to our central city office with a promise that was the best bait in the world for us. We'd have come in response to it, if it had been the last earthly act permitted us.

"We're to hear word from this madman, Grubsnig," I murmured. "I wonder——"

"It would be some amateur detective, like as not,"

Joel broke in with a despondency nothing could shake.

There was a map on the wall before us, on which I had traced the course of the Metal Worm over the continents and oceans. I studied the colored beaded heads of the pins I had used to indicate it, in sudden interest.

"Joel," I burst out, "did you notice this?"

His weary eyes followed my fingers; a quick light gleamed in his thin, cadaverous face; his worn frame lost some of its stoop.

"Hours, perhaps minutes," he muttered. "It will soon be over!"

"It has circled the globe," I cried, not hearing him. "Listen? Do you hear?" I rose and rushed to the nearest window. Almost like an echo to my words, a heavy roar shattered the quiet of usual sounds. Buildings were twisted and turned in grotesque ways and toppling over and the streets were falling inward, out of sight. A broad crevasse had opened across the city, revealing the cavern that was our underground city with its crowded millions. There was a vast spread of flame as the Metal Worm flashed by somewhere in the depths. Our building quaked and swayed and the heat was insufferable. I closed the windows hastily.

"It's following its original gash," I shouted above the din. "Like a knife cutting—cutting a ball of cheese! It's the end!"

I sprang to the door, responding to a natural impulse to flee and die some place else, but Joel's claw-like fingers reached out and held me.

"Yes, Bob," he said, "perhaps the earth will be rent and smashed into a thousand pieces, into cosmic dust; but, Bob, we're going to stay. We have a duty here unless, of course, you don't want to——"

I calmed down and eased myself gently into the hot leather of the nearest chair. Joel smiled a wan, friendly smile.

"I knew you wouldn't leave me, Bob," he said.

Perspiration oozed from our faces. Our handkerchiefs were already wet, but we went on using them without being aware of the fact. We gulped several glasses of ice water. That gave a temporary relief. I glanced at the clock. We had been waiting for nearly a half hour.

"Perhaps it was just a joke, a hoax, our being called here," I muttered, torn between the desire to stay with Joel and an equally powerful urge to escape this towering pile of concrete and steel that teetered creakingly back and forth on its foundation. We were alone in the building and that did not add to my courage. It was at this time, I think, that my hair began turning gray.

"We'll wait a few minutes more, Bob," Joel answered, his eyes on the far horizon, where billows of jet black rolled across the face of the sun. Lately the sun had been a rare and pale spectacle, appearing fleetingly amid the dank clouds of steam.

There was a movement in the room behind us, then a sharp intake of breath. We squirmed around in our seats. My trousers clung stickingly to the leather cushion. Perspiration was in my eyes and it trickled down the bridge of my nose. A wild oath from Joel's tight lips. His eyes were blazing. My lips mumbled something, and heavy, throbbing cords were across my throbbing forehead. I spat viciously. I wanted to bite, strangle, kill!

A taunting laugh mocked our efforts to free ourselves. I choked, trying not to inhale the strange odor that filled the room. Finally I fell back supinely into my chair. My limbs were leaden and hard to move, but my mind was awake, jubilant, ferocious. Joel turned his head lazily in my direction and I saw that his face was lit with unholy glee. "At last! At last!" his bulging eyes seemed to cry out to me.

Before us stood the madman, Grubsnig. His face was set, his eyes burned with insanity.

"Sorry to have kept you waiting, Dr. Murch—and you," looking at me; "but time, after all, is nothing to us. No, don't try to speak. Your tongues are swollen." His voice rasped sharper and I thought we faced death in a new form at that moment. "You have upset my plans. My world empire is falling about my ears. Your atomic machine was more effective than I gave it credit for, but it must not be forgotten that you designed it. Now, any time, any minute the end will come. And you have done this to me!"

He stood near the electric fan and held a metal container behind the moving blades. The stream of scented air swept past us and out into the hall to which the door was ajar. Wild ideas ran through my head. If we could dislodge the fan, kick that metal thing from his hands, make him forget himself! Joel had the same thoughts. His eyes were challenging the fiend.

"Rave, rave, as I did," gnashed the latter. "It's just as well that matters have come to the pass they have. The human race was not worth saving. It's a petty, disgusting manifestation: it must have its little schemes, its boundaries, its soldiers and its wars!"

For a moment he rocked on the balls of his feet and I thought his fumes had got to him.

"My world empire is not to be," he went on. "The good that I wanted to do will never be done. And your machine has wrecked everything! Let me assure you that my revenge will be sweet. I shall still have an empire and with you as my subjects! Think of it—just you and I, here alone and hating one another on whatever part of the Earth that is left, hating one another until life ebbs away from your tortured bodies. And, if we are to die now in this cataclysm, we'll die together, still hating and hating, our blood turning into wormwood in our veins, our hearts shriveling with the venomous, malignant disease.

"I'm leaving little to chance. Thousands of my ships are rocking the earth with delirious mirth. Millions are laughing. My men started from the north polar regions and are reaching southward dropping their bombs. Any who escape will die later of the pestilence, the seeds of which have been sowed so well in what rivers are left. When their work is done, my men will pass out, too, for, unknown to them, I have inoculated them with a special virus.

"Ah, you are warm and you want to talk! That will be music to my ears!" He adjusted something on his gas tank. "Drink; your limbs will be lighter and talk for your tongues will become normal."

Fervently we drank the ice water at hand. We could move, sluggishly, with great labor—but we could move!

"False hopes," our captor taunted us. "You are still helpless. Look through the windows. This show is specially for you. The world knows its doom. While you have waited here, the news has gone forth. Look, like scurrying rats they go!"

His voice boomed on. Our hot, aching eyes took in the confusion below. Pride swelled up in me. Even in

this, the last day, men were not thinking of self. Great timbers were being slung over the crevice that had been the main subway, precarious bridges were being hurriedly constructed that the milling mass of humanity might surge over flame, smoke and steam, and escape to the south, forever to the south, away from that horrible dementing, convulsive gayety that swept down from the north, away from the long green streamers of gas that reached here, there, everywhere.

Above the rumble of the Earth was the drone of many ships in the air, drawn, as if by some gigantic magnet, all in one direction. As hour after hour we sat through that heat-steeped afternoon, this drone swelled in volume until the very floor under our feet took on a new vibration. Our building still held as it swayed as if by a breeze, and the maddened hordes, which now fought their way over the great bridges still springing up throughout the city, as they were elsewhere, wherever the crack in the Earth was not too wide, surged in a wide circle about the base of our concrete pile—as if one kind of death mattered much now from any other!

As dusk settled down, there was no let-up in the heat. The sky flared with reds and oranges and in the light of the fires humanity still struggled onward, in all kinds of conveyances, in the air, on the ground and on foot. Other races than the white began to appear, Blacks, Spaniards, Indians, Orientals, a free mingling of the races of the earth all urged by the same desire, all equal for the time being. Elsewhere, on the face of the globe, the gap was too wide, only here had Fate left a means of escape, and before our eyes the peoples of the northern half of the planet were pouring like tumultuous waters into the southern half. Whole tribes and bands and caravans marched parallel to the unnatural canyon, seeking a crossing and finding it here at last.

The night wore on tediously; the hours were eternities. We sat and sat, now silent, now ranting and raving, but the long vigil was beginning to tell on Joel. His storm of searing words was ebbing lower. Like mummies we sat and only when the hot breath of the night brought up new sounds, new earth tremors, did we stir. Once a dark blot of humanity had stormed the nearest bridge in numbers too great for the frail structure and with loud, wild laughter the squirming mass had dropped from view.

Toward dawn I noticed Joel slyly closing and opening his hands, one finger at a time, then moving his feet, turning his head rather aimlessly but all very carefully. At the same time I sniffed the air from the fan. A thrill ran through me. The air was but faintly scented. Had Grubsnig left something to chance after all? In a few minutes I was convinced of this. I could scarcely restrain my elation. I let my head drop sleepily to hide the fact of my discovery.

Joel's head, too, was sunken on his chest and now guttural oaths issued from his lips. In the midst of them I caught his wink. My lips moved soundlessly, mouthing the words, "One, two—"

On the third count, like wild cats, we sprang at our enemy. The ice cooler toppled over and we were sprawling over a piece of furniture that had been kicked in our way. Fear had subdued the insane light in Grubsnig's eyes. He flung away the useless gas tank, flung it at my head. It struck me, drew blood but did not stop me. I wrapped my arms about his legs. Joel was back of me. He beat my back with clenched fists, with a mad desire to get at Grubsnig himself.

We lurched, fell, were up, then down again, now in a meaningless confusion of arms and legs. Other furniture crashed to the floor. To us the world has ceased to be. We were alone. Our panting and heaving punctuated the struggle. Joel cried and pleaded, "Leave—leave him to me" over and over again but I would have killed Grubsnig, would have trampled upon him, but with a grasp of pain I let go and fell away. Joel seized the whirling fan and cast it away from us. It had fallen on us during the mad scramble.

Our quarry, however, was gone. Down the length of the silent halls we pursued him, leaving a trail of red. At the stairway the chase moved upward. On the roof, lit by the surrounding fires, a windmill plane was standing, its engine purring silently, its windmill blades moving slowly in the air stream from the propeller.

"Head him off!" I cried to Joel. My voice was hoarse. I don't think he heard me.

The plane was rising vertically from the roof. I sprang upward, caught one of the landing wheels and saw that Joel was hanging on by one leg and one arm from the other.

"Good-bye, Bob, in case—" he called to me and a lump formed in my throat as I returned the salutation.

The plane was in swift flight. We hurtled through the black smoke but something was wrong, for the ship seemed to be circling endlessly amid the droning shapes that churned by us in the jet fog.

A heavily laden passenger plane bore down upon us suddenly from the north. I closed my eyes in horror and it passed amid a crashing of wings and a burst of flame.

We began to sink, hurtling down, ever down toward the crowds below, faster and faster until the giant plane-parachute opened at last and stayed the downward plunge of the flaming torch to which we clung. Like stamping cattle, the crying, groaning hordes swept by us as we landed.

Joel fell near me but on the shoulders of a densely packed group and I saw him carried away kicking and struggling toward a raw wooden arch over the crevice. Nothing but death could stop that crowd. As I came down myself, millions of feet were stamping the earth around me and I expected to be crushed at any moment—but I didn't pause. Painfully I crawled toward the burning wreck through the forest of legs. I did not mind the kicks and blows, the sweat and blood in my mouth: I had but one aim in life, I had to find Grubsnig and balance the books before I, too, should pass out.

And then there came a loud rush of tearing, driving wind that tore the clothes from my back, a screeching and a roaring, flames all about me, a terrible rending sound, the thunder of a million express trains as the southern half of the Earth shot out into space, jagged and bleeding and burning, sudden pain, consuming, killing pain and then my eyes closed in God-sent unconsciousness. . . .

My fingers are tired from gripping my pen and I'm warm from having lived over again that dreadful experience. Tired and hungry, I welcomed the summons from one of my wives who stands behind me in the wide stone portal and urges me to hurry as my family are gathered about the board and waiting for me.

But I do not go in at once. Darkness has settled over our part of the planet, though I know that over

(*Continued on page* 90)

Hidden *in* Glass

By Paul Ernst

THE spectroscope, with its glass prisms, has analyzed the material constituents of sun and stars, has told of their motions. For years glass lenses have given us the life history of microscopic creatures and of distant orbs in the heavens. Wonderful things can be done with glass, as witness what the hero of this short story gem performs. The author introduces a completely new field of investigation for the enterprising detective. Science enters more and more in the detective's successful solution of problems. These new wrinkles are surprising, but not impossible.

AS Professor Brainard sat before his desk, he clenched the latest edition of the *Scientific Universe* savagely between his hands as though he longed to feel a human throat there instead of the insensate paper. His eyes were staring so that a ring of white showed around each dilated pupil. His fingers, tipped with ragged, neglected nails, were trembling with righteous indignation.

Willis was attacking him again—Willis, who seemed only to live for the opportunity of publishing something satirical and stinging in the journal, that should make the rest of the research world look up and laugh.

He opened the pamphlet again and read some of Willis' shrewish article:

"The latest theory of light refraction advanced by one of our number is almost as fantastic as his less recent ideas on molecular activity. Geometry is one of the oldest of intellectual pursuits; and the supposition that new properties might be discovered in the relations of curves and angles—unless one enters the impossible realm of the fourth dimension!—is hardly credible . . ."

The sober looking journal shook in Brainard's hands.

"The fool!" he exclaimed aloud. "The shallow, cocksure fool! And how does he know but what I *have* discovered the secret of the fourth dimension!"

The words of the article recaptured his attention: "We can only ask again for mechanical proof," it ran on, as though answering him audibly. "It would be easy for our distinguished fellow research worker to substantiate his claim by having a sheet of glass ground to his mysterious formula. Since he will not do this we can only conclude that, although once a brilliant physicist, he has lived and worked too long alone, and has let his mind stray over the line of the real and into the territory of the unreal . . ."

That was Willis—the most bitter and virulent contributor of all the group who kept the *Scientific Universe* alive, and who too often squabbled and threw rhetorical mud like children. But this time he had stung too hard! That insinuation of unsound mentality was not to be borne!

Brainard threw the paper to the floor and stamped on it as though it could be hurt by his heels. Tiny flecks of white appeared on his lips. Senselessly he caught up a heavy glass ink well and threw it against the wall in front of him. It fell to the floor with one edge chipped off, leaving an irregular splotch of ink and a jagged dent in the plaster between the two front windows as testimony to his insane violence of temper.

Glaring at the cube of glass on the floor, he gradually resumed control of himself, though his rage was no less intense for being colder and more cunning. A speculative look appeared in his eyes, and again he pounded on the desk top at slow intervals as though keeping time with his fist to the strain of some persistent thought.

At last, still staring abstractedly at the glass inkwell, he smiled. It was not a pleasant smile!

"So he wants proof!" he said aloud. "He wants proof—this man, who as good as calls me insane! Well—he'll have it!"

Illustrated by
MOREY

And now, apparently without the touch of a human hand, the lid was raised. . . . A man scrambled from the box, his clothes smouldering and his face purple from strangulation. . . .

He swung around to face the acid stained desk, and delved among the litter there for a pad of paper and a pencil. For the rest of the morning, through lunch hour and late into the afternoon, he worked in blind concentration, filling sheet after sheet with angles and curves and parades of algebraic symbols. Now and then he glanced at a typewritten slip on which were cabalistic looking equations. These were woven in with other equations and geometric designs until at length he seemed satisfied.

The tangled results of his figuring were swept into an untidy pile on his desk; and he grudgingly left his task for a few moments while he went downstairs to the dinner his housekeeper had prepared. As soon as possible he returned and, with square and drawing instruments, began to concentrate in one design the sum of all the scribbled sheets.

A geometric figure gradually emerged—a thing of flat curves and shallow angles, through and across which marched rows and rows of fractional dimensions that would guide workmen in duplicating in glass the abstract thought of a mathematical mind. The light of dawn was just appearing when the drawing was finished; and with a sigh he leaned back in his chair and snatched a few hours of cramped sleep.

Immediately after waking he took his drawing to the offices of the largest lens and optical factory in the city and spent the morning explaining the intricacies of the object he wanted ground to specification. Then, with crafty precaution that no one group should have complete knowledge of his discovery, he went to a rival lens company with the precious typewritten slip containing his original equations. Here, too, hours were needed for a full explanation of the thing he wanted made—a sheet of glass about the size of a dinner plate, but of irregular outline and uneven thickness.

Returning home he muttered aloud to himself of the proof that Willis was soon to have. And at the sound of his voice, and the look in his staring eyes, people moved away from him in the streets and turned to gaze after him as he passed.

PROFESSOR WILLIS had his laboratory in the far end of a great storage yard owned by the industrial company that retained his scientific services. The yard was surrounded by a ten-foot fence capped with strands of barbed wire; two watchmen went their rounds every night to guard the merchandise piled over the ground; and every precaution was taken to make sure that no one entered who had no business there.

Nevertheless, on a starless night, about two months after Brainard had given his two curious orders to the glass factories, Willis' laboratory caught fire and burned to the ground.

Willis was frantic. In the midst of an important and engaging experiment on molecular disintegration, he was barred indefinitely from further work. All his equipment was warped or cracked by the heat of the fire, and to replace it would be a matter of weeks. Furthermore he knew of no other laboratory outfitted for his needs—but one. That was owned by a man from whom he hesitated to ask favors—a man whom he was uncomfortably aware of having attacked vindictively in a late scientific article!

But next morning, while he was brooding impatiently over his ill fortune, his phone rang and a solution was offered to him.

"Willis?" came the harsh voice of his rival, Brainard, "Hear you had a fire last night." A pause. "I called you up to say that I'm going away for a month on a vacation, and you can use my laboratory for your molecular work if you want to. It's got all the stuff you need, and no one will bother you . . ."

Willis chewed on the end of his cigar. He was very much averse to taking favors from this man. Not only did he dislike him, but also he feared him! Lately there had been a disquieting look in the fellow's eyes when they rested on him.

However, if he were to be away for a month, it would be a waste of opportunity not to use his equipment. He accepted, thanking his rival rather awkwardly. The illogical apprehensions that set him to wondering at the unexpected generosity—the unreasonable suspicions that some motive lay behind the invitation—were dismissed; and he prepared to gather up the few effects spared him by the fire.

Brainard, at the other end of the line, hung up the receiver and rose wearily from his chair. His clothes were muddy and torn; and on the back of one hand there was a long scratch that might have been caused by the barbed wire of a storage yard fence. But his lips were shaped to a smile, as if at the thought of some plan that was developing to his entire satisfaction.

Willis dreaded meeting his host as he came over that evening to install himself in the borrowed laboratory; but his nervousness was comfortably dissipated by the fact that Brainard had already gone, leaving a curt note of welcome and a set of duplicate keys with the housekeeper.

The servant, an elderly woman with thin lips and blurred gray eyes, handed over the note and the keys, and prepared to leave. She, too, was taking a vacation while her employer was away. Willis would be absolutely alone in the big house, half of which was Brainard's workshop.

He had planned, after a casual look at the laboratory, to go back to his own home and return in the morning. But this he found himself unable to do. For, temptingly laid out as punctiliously as though arranged by his own hand, were all the instruments he needed for the continuation of his experiments. Brainard must have kept up with his activities astoundingly, to have duplicated his equipment at such short notice!

A touch led to a little more precise arranging, which in its turn drew him into the beginning of one of those heedless spells of concentration that had preceded many a night of work. Soon he was moving swiftly about the chamber, oblivious to time and all else but the array before him.

Just once he was momentarily interrupted. A slight scraping noise came to his ears. Confused by the effort of tearing his attention away from his work, he glanced around the room. There was nothing unusual to be seen.

Striding to the door, he locked it and slipped into place a heavy bolt that worked from the inside only. Then he fastened the front windows securely and returned to the long table, sure that there was no way in which he could be interrupted. The vague fear of Brainard, that had been awakened again at the sound of the odd noise, was submerged in the fascination of his experiment.

On and on he worked over the task that would never be completed by his hand. Time was lost; and it might

have been moments or hours later when he half turned —to see something behind him that brought a startled shout to his lips!

The cry was cut off like a slashed cord as something crashed down on his head.

THE sole witness in the investigation of the murder of Professor Willis was unable to recall the exact hour at which he had heard that muffled cry from behind the closed windows of the Brainard home. He only knew that it was very late at night, that he had notified a policeman at once, and that, in less than two minutes, they had forced a way in and were exploring the house. No one was found, although the witness insisted that he had heard a slight noise as they approached the door of the laboratory. This, however, was disregarded; after breaking in the door a thorough search of the big room proved it to be empty of any living thing.

On the floor was the body of Willis; and no medical examination was necessary to tell that he was dead. Obviously, also, he had been murdered; but in spite of the quickness with which they had entered, there was nothing to tell where the murderer had gone or how he had managed to disappear so rapidly.

Careful not to touch the body, the officer gazed at it curiously. It lay, with eyes staring fearfully and head battered in as though hit by a club, near an odd object that was drawn up next to the wall.

This was a large glass box, about six and a half feet long by four and a half feet square, a contrivance that inexplicably suggested a plate glass coffin. A glance showed that it was empty. He could look through it and see the wall behind as clearly as though gazing through a freshly polished window.

Using the phone on the desk, he called headquarters, careful not to leave the room for an instant until an examination could be held. Then he settled back in his chair to wait until Blair, or some one, could come with the night squad. In a short time after he phoned, the squad arrived, with Blair in charge.

Each detective, it is said, has his own peculiar methods of solving crime, just as artists have their own individual ways of designing a picture. The method of big, slow-going Blair was apt to be dangerous to himself, in that he insisted on working absolutely alone in the scene of violence; although in this case certainly no one could have foreseen danger to the most solitary of investigators!

He irritably accepted the presence of the coroner till the body had been examined and removed. Then he instructed his men to go over the house, and set himself to the task of searching the laboratory. But first he fastened the shattered door by propping a chair under the knob to make sure he would be let alone while he combed over the room for clues.

He read and reread the note from Brainard that accounted for Willis' presence in another man's house. Knowing nothing of any enmity between the two men, he saw in the note and duplicate keys only a hospitable offer from one scientist to another in time of need.

Methodically he began to search the place. Examination of the splintered door told him that the room had been securely locked from the inside by the unfortunate scientist before he started the midnight experimenting. The windows were also tightly fastened and showed no signs of having been tampered with. The first mystery to be solved, it seemed, was how any one could have entered the room while Willis was there at work!

He considered the chance that Willis might have locked himself in with some other person, an assistant perhaps. But that was proved impossible by the inside bolt on the door. No one could leave the room and relock the bolt from the outside. This fact also extinguished the momentary idea that Brainard himself, with his own keys, could have entered and left the laboratory that night.

Finally dismissing the problem of entrance as something that might later be solved by carefully sounding walls and floors for a secret doorway, Blair set stolidly to work to examine the contents of the room in search of any chance hints that might present themselves.

The rows and rows of test tubes, drawing instruments, and delicate electrical apparatus told him no story. The desk drawers revealed nothing relevant to the case. Puzzled, he stared absently at the huge glass box that ranged along one wall beside the dark stain on the floor where the body had been found.

The box, too, told no story. It was empty. As he looked through it the wall showed clear on the other side; and as he came nearer he could see the floor through it with equal ease. He tried to lift the lid; but, as he tugged at it, cautiously for fear of somehow breaking it, he found that it did not move. This in itself was mildly perplexing as he could see no evidence of a lock or catch of any kind in the clear glass front. Along the back ran a heavy steel strip, which reinforced its hinges, but in the front there was no speck of metal visible.

The possible purpose of the box was beyond him. Perhaps it was designed for some sort of aquarium, though why even the most scientific of fish tanks should have a lid over it was puzzling. Looking through it he observed that there were spaces around the hinge bolts near the top large enough to admit air in case the contrivance really was used for an aquarium.

However, he could not see that any light was shed on the murder of Professor Willis by the presence of one more strange scientific instrument in a room full of such things.

Shrugging indifferently, he turned away from the empty glass box. . . .

The next instant he received a smashing blow on the back of the head, and fell in almost the precise spot where the body of Willis had lain before him!

AT six o'clock in the morning the detective, Rand Hardy, was roused from his comfortable bed by a phone call from headquarters. Half an hour later the wispy little man, with the graying hair and the peculiarly blue eyes, was listening to a tale of two men struck down in an empty room which in each instance had been locked from the inside. The first, Professor Willis, was dead. The second, Blair, was in the hospital with a fractured skull.

At the end of the short, and not very helpful, account of what had happened, Detective Hardy nodded and went out into the bright morning sunshine. His first trip was to the hospital where he asked to see Blair. Here he met with no success in his crusade. Blair did not recognize him and was weakly delirious. Babbling sentences poured from his lips, ranging from broken snatches of childhood reminiscence to repetitions of words uttered the day before.

One occasionally repeated phrase, however, made

Hardy frown attentively. This was an unintelligible reference to a glass box. There were no elaborations on the theme, merely the words—the glass box—murmured over and over again.

Puffing absently at an unlighted cigarette, he left the hospital and went to the Brainard home.

"The door was locked both times?" he asked Harris, a younger man, dark and taciturn, with whom he often worked.

"Yes. From the inside," said Harris. "Willis had fastened it with this bolt you see, and Blair had propped a chair under the knob so tightly that we could hardly force the door open."

"You're sure it would have been impossible to get into the room?"

"In the ordinary way, yes. Perhaps there's a secret entrance," he shrugged. "But we've sounded walls and floor and found no trace of such a thing."

"Have you any theory at all of what might have happened?"

Harris hesitated. "Well," he said finally, "the house was entered too soon after the murder of Willis for the murderer to have escaped. And the second time a man was knocked on the head here, the building was covered by half a dozen of the force, and no one could have possibly left the laboratory."

"Then you think whoever did it is still in the house?"

"Hardly that," said Harris. "My idea is that Willis and Blair weren't done in by anything human at all—by some mechanical thing." He pointed to the racks of apparatus that lined the walls. "I'm no scientist, so I don't know the meaning of much of this stuff. But it occurred to me that some one of these things might be an innocent looking kind of death trap. That big glass box, perhaps . . ."

With the words, Hardy turned to stare. The glass box! He remembered Blair's repetition of the phrase in his delirium.

"What do you suppose it's for?" he exclaimed.

"Haven't an idea," said Harris. "It's empty—but I can't help thinking it has some significance. Both men were struck down beside it, in the same spot. Possibly there's some kind of spring arrangement in the floor there, and when a man stands on it his weight is enough to release the force . . ."

"Have you tried it?"

"No-o-" said Harris slowly, "I haven't. That would be a good deal like sitting in an electric chair to see if the current is turned on!"

Carefully avoiding the fatal spot in front of the box, Hardy walked around it, gazing at it intently. Had there been any mechanism inside, it could have been plainly seen.

"Let's test out your concealed spring theory," he said.

Harris started promptly for the spot in front of the box marked with the dark stains on the floor. Hardy caught his arm.

"Wait a minute, young fellow. You're married, with a family. I'll stand there myself—and then, if you're right, there won't be any widows and orphans in this business."

Deliberately he walked over the section of the floor that might cover a deadly concealed spring, and waited to see if he would be the third to fall with a cracked skull.

Nothing happened. Methodically he shifted his weight from side to side; but no ominous, unguessable powers were released.

"That seems to rule the box out," he said, his voice casual. He sat down before the desk and stared at the open front windows where the sun was streaming in on the bare wood floor.

"After all," he said, thinking aloud, "it's not likely that any mechanical force did for Willis and Blair. That's far-fetched and complicated. No, I think a human hand held the club, or whatever it may have been, that cracked the heads for them."

"But if that's the case," protested Harris, "the murderer would still be in the house! He's had no time to escape. And all our work has proved that there are no secret doors or compartments where he could be hiding."

"It does sound improbable," murmured the older man. He turned again to gaze at the glass box that had been mentioned in the delirious babble of the second man to be stricken down beside it.

And suddenly, as he gazed, his eyes took on a colder blue and his lips shaped themselves to a soundless whistle. For, looking through the transparent glass walls, he noticed a curious thing.

The wooden baseboard that surrounded the room and that presumably extended along the wall behind the box—could not be seen through the clear glass! It came up to each end of the box and then disappeared!

The obvious conclusion was that, able to see through the box and still unable to see any trace of baseboard—there was no baseboard there to be seen! And as it was a foot and a half broad, if a section of it had been removed, it might provide the secret way by which some one could enter the room in spite of door and window locks.

"Help me shift this box away from the wall," he said abruptly to Harris. "I want to look behind it."

The combined efforts of the two men could not move it an inch. Panting, they gave it up.

"Call a couple of the boys from downstairs," commanded Hardy. But two were not enough. Two more had to be summoned; and the six of them ranged themselves at side and ends of the incredibly immovable glass box.

"It must be fastened to the floor!" exclaimed Harris.

"No, there it moved a little. It's just kind of heavy."

It was indeed heavy. The six of them were barely able to slide it a few feet over the creaking, protesting floor boards to a space in front of the sunny windows.

But as the box was moved away from the wall, Hardy stared in amazement. The baseboard was untouched behind it. In spite of the fact that he had been unable to see it through glass as clear as spring water, it was undeniably there and undeniably untampered with. Here was no secret way.

Completely puzzled, he sat at the desk again and looked at the box in its new place by the window. The sun, pouring warmly in, bathed it with light and reflected from bevelled edges in rainbow colored strips. It seemed to mock him, empty and innocent appearing.

And then he made another discovery.

About three feet above the lid there was an irregular splotch of ink and a jagged dent in the plaster of the wall between the two windows. As he looked straight at the box, apparently seeing through its sides, he saw the same irregular ink stain. It seemed to be on the wall directly behind the box instead of a yard above it!

"Well—" breathed Hardy.

Rising from his chair he walked to the side of the box.

Gazing down into it he saw the floor. But it was not the floor directly beneath it. Instead, he found himself staring at the tips of his own shoes a foot and a half to the side!

While Harris watched him wonderingly, he walked around the box, gazing through it from different angles.

"Have you opened this thing?" he demanded.

"Why, no," said Harris. "I tried to, and it seemed fastened somehow, so I let it alone. No use of opening it—you can look square through it now."

"No," corrected Hardy. "You can look through it, all right—but not squarely!"

"What do you mean, chief?"

"I mean that when I sit here at the desk and look through it—I see a patch on the wall three feet above it. And when I look down through the lid—I see the floor a foot and a half to the side. In other words, Harris, it's impossible to see *into* that box!"

"But it's clear as window glass," argued Harris.

"Clearer," Hardy agreed. "You'd think a speck of dust could be seen in it. But it couldn't be if you found your glance being deflected off at right angles!"

Wondering, the rest stared at the coffin-like thing that gleamed in the sun. And all saw the same strange phenomenon at the same instant—a thin wisp of bluish vapor that began to curl out from the open spaces around the hinge bolts.

"It's smoke!" exclaimed Harris, sniffing.

"From an empty box!" added another of the men.

But it seemed no longer empty. Gradually it was growing opaque so that it was impossible to see through it. The opacity deepened till it appeared suddenly to have been filled with milk.

And now, apparently without the touch of a human hand, the lid was raised. It opened as rapidly and evenly as though worked by some kind of machinery.

A man scrambled from the box, his clothes smoldering and his face purple from strangulation, and dashed for the windows. He was half out of one of them before they could reach him. A sheet of glass—about the size of a dinner plate but of uneven thickness and irregular outline—fell from his hands and smashed to pieces on the sidewalk below.

It took four of them to subdue and handcuff him; and with one glance at the gibbering thing that had once been Professor Brainard, Hardy picked up the phone and got in touch with the city asylum.

"HIDING in an empty box!" exclaimed Harris as, a little later, he and Hardy examined it.

The mystery of its weight was revealed at a glance: the top and sides were not ordinary flat sheets of glass, but were shallow triangles each plane of which was pronouncedly curved. At the thickest points the glass walls were nearly half a foot through, rendering the box enormously heavy. This, too, explained why the lid had seemed to be fastened down—its sheer weight made it a difficult task for one man to raise it.

Inside the box was a screw jack arrangement, so geared that the lid could be jacked up rapidly and noiselessly by any one lying inside.

Hardy pointed to the curved under surface of the lid.

"The reason for the smoke," he observed. "We just happened to put the box in the sun's rays, and the curved surface partly focused the heat like a burning glass. It must have been uncomfortable in there."

"But—hiding in an apparently empty box!" marveled Harris again. "And of course the chances were that no one would bother to open it when they could see at once that it was empty. So simple . . ."

"Simple?" repeated Hardy, raising his eyebrows.

"Why, yes. It's just a kind of prism effect. The principle of the periscope, you know. If you look into a glass prism your glance is deflected off at an angle."

"But the sides of this box aren't prisms," Hardy pointed out. "If they were—you wouldn't have any box left. You'd have a solid cube."

"Same idea, I guess," said Harris.

In response, Hardy stepped into the box and lowered the lid over himself with the jack. Harris gave a start of surprise. Though somewhat distorted by the curved glass surfaces, the body of his chief was visible.

"When Brainard was in it he was invisible," said Hardy after he had clambered out. "When I'm in it I can be clearly seen. There's more to this than meets the eye, Harris—a few details that I'll bet a lot of scientists would give their ears to know. Maybe the answer lies in that sheet of glass he threw out. . . ."

Puffing absently at a cigarette, he pulled the window shades to cut off the sun lest the box set the wood floor afire.

"Oh well, what's the difference," he said at last. "We've got our man. Let's get some breakfast."

A still unsolved riddle, the glass box gleamed blankly after them as they left the room.

THE END.

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. When was Neptune discovered? (See page 9.)
2. What principal features of the Sun are special subjects of observation? (See page 20.)
3. What is the relative mass of the earth and of Mercury? (See page 21.)
4. What is the albedo of a body, such as a planet? (See page 22.)
5. How may the operation of the brain be described? (See page 26.)
6. In what liability to, or rapidity of, degeneration of life cells does the brain tissue exhibit a difference from muscular tissue? (See page 38).
7. What function is supposed to be lacking in the frontal lobe of the brain? (See page 38.)
8. In what part of the brain are the speech centers supposed to be? (See page 39.)
9. Have wars led to any developments of a useful order? (See page 45.)
10. What is the temperature of the sun on the surface and in its center? (See page 47.)
11. What is the Berserker madness, a psychological phase of former times? (See page 51.)
12. What is the meaning of the word "protoplasm"? (See page 81.)
13. What theory, referring to the force inherent in light, was evolved by Clark-Maxwell? (See page 81.)
14. Has any scientist thought that it is possible for life to pass from star to star? (See page 81.)
15. What is phototropism? (See page 86.)

Atomic Fire

By Raymond Gallun

TEN million years hence, the sun will be old and climatic conditions and the aspect of the heavens will have changed accordingly. Many effects will have to be taken care of. It is not absolutely impossible that the nebulas should play a part in the cosmic changes. Perhaps some dark nebula will affect the planets directly. Anything might happen in ten million years. "Atomic Fire" is definitely thought-provoking, based, as it is, on scientific possibilities.

Illustrated by MOREY

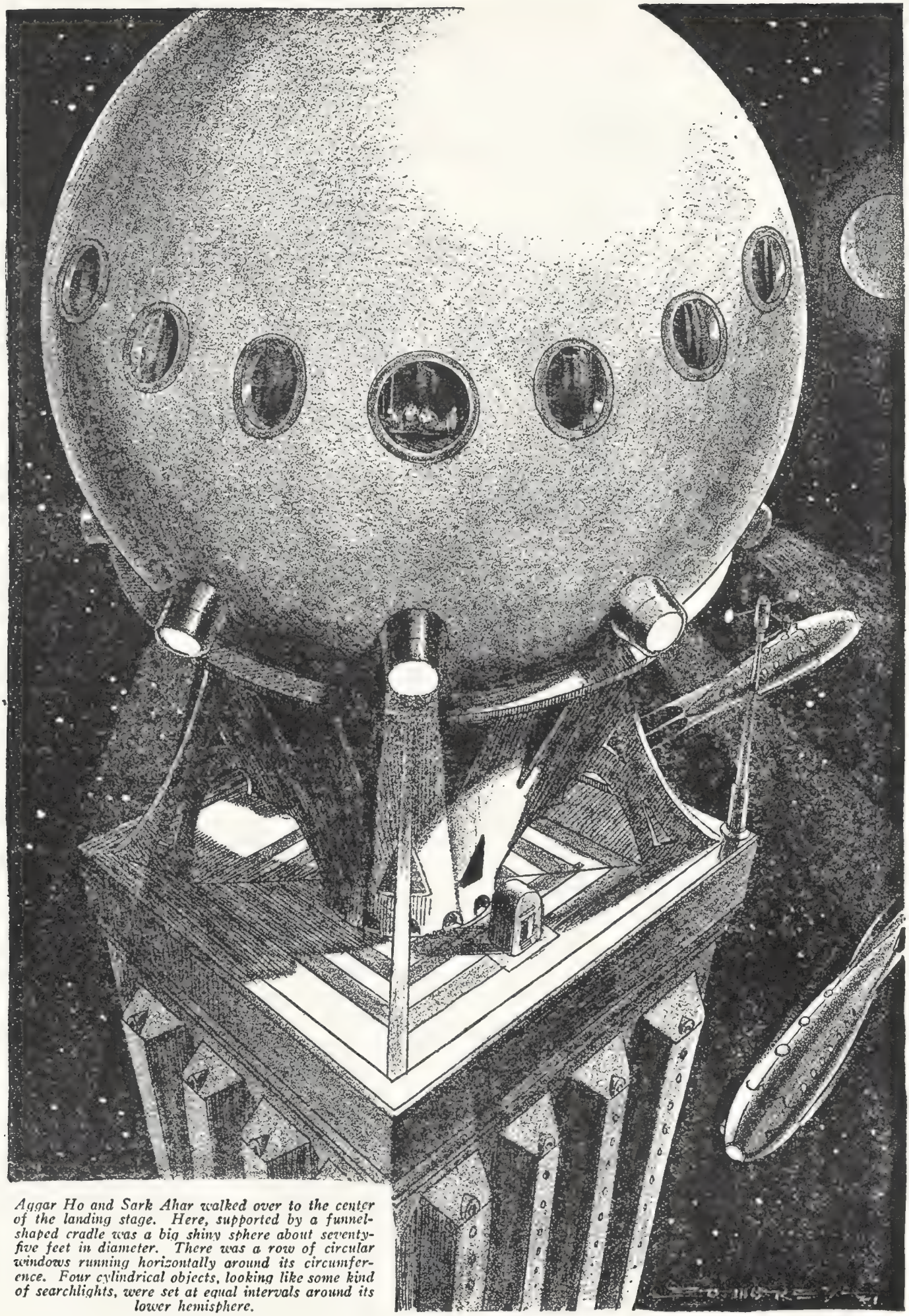
AGGAR HO was scrutinizing carefully the scene in the view-plate of the great reflecting telescope of the University of Itlantos in Panenbu, the capital city of Aerth. Every now and then he would glance aside, and taking a silvery stylus in his skinny, almost clawlike hand, he would draw queer little symbols and figures on a pad of white paper on the desk before him. There was a concerned look in his immense eyes, and in his furry, though oddly human face, there was an expression which one of his fellow creatures may have interpreted as denoting awe, or even dread. To Aggar Ho such emotions were almost impossibilities. For eons his ancestors had been toying with the forces of nature, curbing them according to their needs and desires, until now it would have taken a great danger indeed to awaken in any member of his race the remotest hint of fear.

But though the danger which Aggar Ho read among the stars may have been colossal enough to make him a little afraid, his keen intellect remained unhampered. If it was within the scope of possibility for him to help avert any coming calamity, certainly no silly emotions would prevent him from doing so.

To a man of the twentieth century, Aggar Ho would have seemed to be a creature of a nightmare. He wore only a plain silver diadem to hold his bushy gray hair in place and a breech cloth of some gray knitted material about his hips. In consequence, his peculiar physique was well revealed. Except for his chest, which housed his huge lungs and was immense beyond all comparison with anything human, his body was singularly frail. His arms and legs were spindly and attenuated. His feet were flat and large. A thick polar fur covered him from head to foot. His ears were very large and bat like—adapted for hearing in a very rarefied atmosphere where all sounds are faint. His great green eyes had elongated pupils like those of cats. They stared out from either side of his beak-like nose and made him look for all the world like a crafty old owl. There was just a hint of fierce determination about them, a look which had survived Aggar Ho's youth. Plainly the old scientist belonged to an age far distant from the year 1931. The appointments of the room—its dials, switches, and its single radium lamp over the desk in front of the telescope, and its big crystal dome which transmitted the starlight all proved this.

Many strange things had happened to Aerth in the past ten million years. In 2089 A. D. the inhabitants of Mars, driven from their native planet by shortage of air, water and sunshine, had descended to Aerth. With their superior weapons and knowledge they quickly subdued the Aerthians. It was from these conquerors that Aggar Ho was descended. The Martians had not been cruel masters. They had ruled Aerth wisely and efficiently for ten million years, and had won the admiration and willing co-operation of the natives to whom they were almost gods. The two races always remained distinct from one another, for though inter-marriage was not uncommon, no offspring came from such unions.

As nature had worked on Mars, so it worked on Aerth. The planet's water supply slowly seeped into the rocks far beneath the surface crust, or as vapor, leaked away into space until now the oceans had vanished. The atmosphere was gradually dissipated in this latter fashion until at length it was so rare that a man



Aggar Ho and Sark Ahar walked over to the center of the landing stage. Here, supported by a funnel-shaped cradle was a big shiny sphere about seventy-five feet in diameter. There was a row of circular windows running horizontally around its circumference. Four cylindrical objects, looking like some kind of searchlights, were set at equal intervals around its lower hemisphere.

of the year 2000 would have gasped and died in it in a few minutes. The sun, too, had grown old. Its deep red light shone down upon vast stretches of parched desert over which every now and then terrific dust storms raced. The sky was always a deep cloudless blue. In it a few stars twinkled even during the day. Except where the thin ribbon-like canals ran their ruler-edged courses over the face of the planet bringing water from the melting polar snow-caps, everything was dry and devoid of vegetation. The summers were still quite warm but the winters were terrifically cold.

Presently Aggar Ho reached for a tiny lever at the side of his desk and swung it from a vertical to a horizontal position. The picture in the view-plate before him faded. Then he tapped a little brazen gong with his stylus. In a moment, in answer to the tinkling summons, another creature entered the room through a curtained door.

The new arrival was somewhat more human than Aggar Ho. He was heavier and much better muscled. His chest was large, but not so large as the Martian scientist's, and the white fur on his body was not so long and thick. His eyes were blue; there was a twinkle about them which told plainly that their possessor was brim full of clever good nature. The ancestors of this man had all been natives of Aerth.

"Well, Chief," he said, "what news from the stars? Has the Black Nebula come close enough so that we may pull its tail or has it suddenly vanished altogether?" Plainly the two men were on the most intimate of terms.

Aggar Ho looked up at his assistant. The grave expression on his face did not change. "We can no longer joke about the Black Nebula, Sark Ahar, my son," he said. "Unless something can be done, it will cause all the inhabitants of Aerth to be frozen to death in thirty-five days."

The glint in the young Aerthian's eyes grew hard. "You have finished your calculations? You know that all this is true?" he inquired.

"There is no chance for a mistake," returned Aggar Ho. "Here are my figures," and he tapped the pad of paper lying on his desk. "You may take them to your work room and check them if you like. Ever since we began to watch the Black Nebula six months ago I have been afraid. We thought that it would miss the solar system by several billion miles but tonight I have plotted its course. It is going to envelope the sun and blot out its light and warmth! Microscopic observations prove that it is a vast cloud of the heavy opaque gas number 106. When it reaches the sun, it will form a dense layer over its surface. Then there will be darkness."

"You have thought of a way out?" asked Sark Ahar.

"Yes. There is atomic energy. I have a theory which with a good deal of careful experimenting may result in its release. With the inexhaustible power contained in the atoms of all substances at our command there is no doubt that we could both heat and light our world very adequately. Great spheres of white-hot disintegrating matter supported on towers all along the courses of the canals would free us forever from dependence on the sun. But can we control such a mighty force? Once started anywhere on Aerth the process of disintegration would probably continue until the planet had become a globe of incandescent gas."

"We will find a way, Chief," said Sark Ahar. "The space ship was delivered by the Fallef Company at noon today. It is on the landing stage now. Are we going to start the experiment tomorrow?"

"Yes."

AGGAR Ho and Sark Ahar stepped out of the elevator which had carried them to the landing platform at the very pinnacle of the highest tower of the observatory. Presently they had left the little cupola-like structure at the top of the shaft. The platform was a flat, metallic square about two hundred feet each way. A light, icy breeze swept through the morning sky. It blew against the bodies of the two men rumpling their silky fur wrappings. There was an exhilarating tang in it. The altitude of the tower was fully two thousand feet, and the view from its summit was magnificent. Below them toward the west the men could see the great city of Panenbu, with its countless multicolored spires, gleaming under the morning sunshine. The streets were thronged with midgets going to work—still ignorant of the danger that threatened them. Toward the east beginning at the base of the great observatory building was a strip of cultivated land about eight miles wide. It was faintly green with the earliest growth of a grass-like cereal called telth, for the water coming down throughout the subterranean conduits from the melting north polar snows had just arrived three weeks before.

Beyond the band of telth, the Aerthian wilderness stretched off to the far horizon. Except for the countless dunes of yellow sand, it was almost as flat as a table top. It was the bottom of what had once been the Atlantic Ocean.

Everything in view was harshly clear cut, even in the great distance. Above arched the deep lapis-lazuli dome of the sky. Here and there in it a saucy star twinkled.

Occasionally a torpedo-shaped aircraft would glide noiselessly past the tower carrying a group of furry men to some distant city. The sun would glint on its silvery hull, and on the queer numerals mounted on its prow.

Aggar Ho and Sark Ahar walked over to the center of the landing stage. Here, supported by a funnel-shaped cradle was a big shiny sphere about seventy-five feet in diameter. There was a row of circular windows running horizontally around its circumference. Four cylindrical objects, looking like some kind of searchlights, were set at equal intervals around its lower hemisphere. They pointed slantingly downward at an angle of forty-five degrees with the platform. The globe was a space-flier.

Aggar Ho opened an oval door in the side of the craft. The two men ascended a short flight of metal steps to the central chamber of the ship. The room, which was lighted by port holes set all around its walls, was packed with a bewildering outlay of scientific apparatus. At one side, before a large window, was the pilot seat, and in front of it, a number of levers and a board bearing many dials and instruments. It was by means of these that the flier was controlled. The remainder of the floor space was occupied by machinery and devices, and constituted a complete laboratory for exploring the inner secrets of atomic structure. In the center of the room, supported by a sort of tripod, was a black object which looked like a big pressure kettle. Many cables and wires led to it from a bank of cylindrical tanks which were filled with a fluid that supplied an elec-

trical circuit of enormous voltage and amperage. There was a work-bench running almost completely around the walls of the laboratory, and on it were ranged many odd instruments. There were queer microscope-like devices for watching the electrons of atoms rotating in their orbits; there were big glass globes for producing strange rays; there were several electric furnaces, lathes and other machinery for turning out new apparatus whenever it was needed. Besides there was a multitude of other things.

Aggar Ho seated himself in the pilot's chair while Sark Ahar stood beside him. The old Martian shifted a little lever on the control-board. A low musical hum started from somewhere in the hulk of the ship; in spite of its faintness, it was somehow suggestive of an enormous and mysterious power. Now the space flier was shooting upward. It swayed a little. The two men felt their weight apparently increase; just as though they were going upward on a fast elevator. The four repulsion-ray projectors, mounted on the bottom hemisphere of the craft, were sending powerful beams of energy downward and were raising the big globe from the ground.

Details on Aerth's surface were growing rapidly smaller and the field of view was broadening out. Panenbu, with its narrow encircling ring of vegetation spreading out like a vast disc on the desert, was rapidly becoming a toy city. It seemed to drift toward the west, for the fliers were hurtling eastward with terrific velocity. Limitless sandy plains were coming into view, all gleaming and desolate under the morning sunshine. Panenbu disappeared beneath the horizon. Now and then thin ribbons of vegetation running from pole to pole would be seen, traced like tautly drawn strings across the wilderness. Now Aerth looked like a great relief map, and now it began to take on a slight outward curvature. The scientist and his subordinate were rapidly drawing away from their planet.

"That was a fine start, Chief," said Sark Ahar. "The ship is gaining altitude faster than I ever saw a space craft do before at the outset. But I suppose you have to expect such performance from any new invention of the Fallefs. Everything they produce is wonderful."

Aggar Ho turned toward his young assistant. His face was screwed up into a grimmace which Sark Ahar recognized as a disdainful smile. "It was I who invented the new repulsion-ray concentrator that makes the rapid acceleration of this space ship possible. I sold Fallef the rights. Fallef's bungling assistants certainly would never have thought of the idea." Aggar Ho paused for a moment. Finally he said: "You may sleep now, Sark Ahar. In four hours I will call you to take charge of the craft."

The younger man climbed the spiraling metal star to the upper compartment. Here was a little kitchen, a room full of supplies, and a chamber with four berths in it. Sark Ahar tumbled into one and was quickly asleep. Since he had assisted his chief in his work the night before he had, of course, not slept.

Aggar Ho, seated before the control-board watching dials, meters, diminishing Aerth, and the star-shot sable of empty space, mused softly: "He is a fine young Aerthian, Sark Ahar—a native, born of natives, and yet clever—very clever. Sometimes I almost think he will become a scientist. But that would be odd. There hasn't been a man of great wisdom among their race for millions of years. They were a great people before my ancestors came but our superior knowledge robbed them of all initiative. It is too bad."

THE musical ringing of a little bell at his ear told Sark Ahar that his rest period was over. He climbed out of his berth and joined Aggar Ho. He glanced at a meter on the control board.

"Thirty thousand miles," he read aloud.

"Yes," returned the Martian. "By the time your four hours on duty is over, allowing for acceleration, we should be eighty thousand miles from Aerth. There we will stop. During our experiment on atomic energy we will travel in an orbit that distance from the planet. The World Council has decreed it. They fear that we may destroy Aerth if we work on its surface, and well they may, for we are playing with a dangerous thing. Call me when it is time. Good night."

Aggar Ho retired and the young Aerthian took his place.

Sark Ahar stared at the star-strewn circle of blackness before him. There was little to do but think, for the controlling of the ship was, for him, almost automatic. Except when now and then a small meteorite struck the impenetrable force-shield of the craft and made it sway a little, there was no movement.

The death of the world!—within a month! Aggar Ho had predicted it and he, Sark Ahar, had checked his calculations. The Martian as usual was right. They were wonderful, those Martians—especially Aggar Ho. Wasn't it he who had engineered the building of the great Than Taxa canal running a distance of more than ten thousand miles over Aeath's surface? Wasn't it he who had extended man's natural span of life to more than a thousand years? Aggar Ho was great, but here at last was his defeat. What if he did release and control atomic energy? There wouldn't be time to build the towers and spheres he had talked about. Like every man of his race, Aggar Ho had pluck—he'd fight against reason. That was just what he was doing now. But it was useless. The inhabitants of Aerth would freeze to death unless someone thought of something else. He'd have to think. But no, that wasn't sense.

After an hour or so the moon came along and drifted into the flock of stars that had been shining at Sark Ahar through the observation window. It was only a little more than half illuminated. The sun was toward the left of it and wasn't visible from where the Aerthian sat. The satellite seemed a little larger than when viewed from the planet, and its empty plains gleamed with an almost blinding intensity. Sark Ahar studied it. His keen eyes could even make out a few big craters. It was a funny world—the moon—all jagged and cut up and deserted. Sark Ahar had been there twice with his chief. Clad in oxygen helmet and heavy armor, he had enjoyed wandering through its empty valleys and climbing into its lonely craters. Around Tycho there were the remains of an extensive irrigation system built by the last of the Lunarians to make use of the almost vanished water supply. Those Moon Men had become extinct before there were human beings on Aerth. What good was the moon now? It was just a useless derelict of space, desolate and lifeless.

When Aggar Ho returned from his nap he ordered his subordinate to shut off the power. As he had predicted, the craft was eighty thousand miles from Aerth. Its momentum would, of course, carry it a little beyond this point, but the gravitational pull of the planet would

drag it back; and during the course of the experiment it would revolve as a little satellite of Aerth.

Immediately the two men set to work on their seemingly hopeless task. The cover was removed from the great caldron-like furnace and an odd set of metallic plates was placed inside, together with a small quantity of mercury. Then the cover was replaced and the air exhausted from the interior by means of a small electric pump. For a whole day a current with titanic voltage and strength crackled between the plates. Aggar Ho and Sark Ahar, wearing thick goggles and hiding behind lead shields, which alone saved their lives from the dangerous emanations, watched the white-hot inferno through a little quartz window set in the side of the furnace. The whole ship fairly reeked with heat, and the meters registered an enormous consumption of power. Finally Aggar Ho threw the great switches. The light slowly faded from the plates. The first attempt had been a failure. Mercury had refused to give up its atomic energy.

The plates were changed and another substance was placed in the furnace—this time silicon. Another trial was made—also without any hint of success.

Day after day the same soul-searing work went on—new elements, new compounds, new plates, new voltages—all to no avail. And always that big black cloud of fate that was going to blot out the sun crept nearer and nearer. The two experimenters watched its progress in the view-plate of their radio vision instrument. The pictures were radioed direct from the observatory at Panenbu. Fifteen, fourteen, thirteen, twelve days—slowly the time of darkness crept closer. It was only the pluck and self-control resulting from ages of scientific race training that kept all Aerth from going mad.

There were thousands of scientists working on the problem of saving Aerth, and almost all of them sought the means of doing so in atomic energy. None believed that there was any hope, even if the mighty power were discovered, but all kept doggedly on. Aggar Ho and Sark Ahar sighted several experimental ships like their own, and they talked to the occupants of over nine hundred of them by radio. Never was the slightest hint of success reported.

AT last the day when darkness was to fall upon the solar system came. Sark Ahar and Aggar Ho watched the approach of the shadow through the windows of their ship. To a casual observer there would have been nothing very awful about the thing. The only evidence of its presence was the apparent absence of stars in a small portion of the heavens. Gradually as the cloud crept on, other stars were blotted out and some of these which had been hidden reappeared. To all appearances the blackness was moving with utmost slowness, but in reality it was tearing along at a terrific rate. Always it crept closer to the sun. Presently it touched the edge of the glowing red disc, and then for thirty hours the light of the old luminary was slowly fading. For five hours after that a grayish, scarcely visible luminosity continued to come from it, but at last even that disappeared. On Aerth the lights of the scattered cities glowed as patches of dim radiance. Except for these, the planet was entirely invisible. Only the icy stars gleamed on unchanged.

Reports of the progress of things on Aerth came to the two experimenters by radio:

"Sun motors stopped. Stored power will last for several days," was the first report after the coming of darkness.

To all appearances there was little panic. The people had shut themselves in their homes and were waiting resignedly for their end.

Almost all the experimenters had given up the quest and had returned to their native cities. Aggar Ho and Sark Ahar were among the few who remained out in space. They were working like two demons just as they had been working for a month. They would have to give up soon for their supply of power was low.

Two days after the coming of the cloud the report reached the space-ship: "The atmosphere of the planet is freezing. It is falling like snow. In many places whole communities have been frozen to death. The stored solar energy may keep a few people alive for a short time, but the end cannot be far off."

Aggar Ho was fruitlessly examining the instruments over the roaring ray furnace. There was a mixture never before tried, between the plates. Presently he turned toward the younger man who was standing beside him. The old Martian was slowly shaking his head. Sark Ahar scrutinized his chief carefully. He could see that his big eyes were watery and blood-shot and that his rumpled fur looked unusually shabby. Lack of sleep and continuous labor had certainly done him no good.

"You had better rest," said Sark Ahar. "I will watch the furnace. Perhaps when you awaken, the problem will be solved."

Aggar Ho smiled sadly. "Perhaps," he said, and then, after a pause, "Thank you, my boy." He tramped wearily up the spiral stairs, his magnetic boots which served to hold him to the steel floor in the absence of gravity making a clattering noise.

When he was gone Sark Ahar took a single perfunctory look at the instruments, satisfying himself that they registered nothing of importance. Then he went over to the pilot seat at the side of the chamber and sat down on it. He turned it around on its swivel so that he could look toward the experimental apparatus.

Sark Ahar was extremely tired, but still he musn't sleep. He must watch for results—results that never appeared.

Gradually the monotonous crackling of the furnace and the steady drone of the electrical machinery worked on him. He grew drowsy. Nothing mattered to his fagged brain any more. The world was doomed. He didn't have to watch those dials. He slumped far over one arm of the pilot seat. His outflung hand bumped lightly against a tiny lever that gleamed brightly on the ship's control board under the cold light of a little glass illuminating globe set in the ceiling. The catch of the lever was released and the spring that was attached to it made it snap into a new position. A low musical droning almost smothered by the noise of the furnace set in. The ship gave a slight lurch. Its propelling machinery was running at full capacity, sending it hurtling across space. But Sark Ahar did not notice. He was fast asleep.

For hours he slept. Odd dreams flitted through his brain. Devils and imps and what not danced and grimaced before his mind's eye. He saw the moon and then he saw lurid flames suddenly leap out of it. Finally he dreamed that he, a noted scientist, had invented a

mechanical man—a great metal giant with fanged jaws, taloned hands and flaming eyes. He dreamed that the giant had turned upon him—was going to kill him. He felt its hot claws around his throat and its fiery breath against his cheek.

Sark Ahar awoke with a start. His dream had been part reality. The chamber was glowing like a white hot inferno, and flickering black shadows of fantastic pieces of apparatus were dancing on the walls. The light in the illuminating globes had somehow died out. The young Aerthian could hear a thunderous roar quite distinct from the noise the furnace had once produced. It was louder and more terrible. The air all about was terrifically hot. It scalded Sark Ahar's lungs. There was a vapor in it—a strange fiery gas. He could see long, slender pencilings of it reaching over and under the thick lead shields around the furnace like the tentacles of a luminous octopus. Luckily for him he was behind one of those lead shields; if he had not been, the deadly emanations would have killed him.

What had happened? Atomic energy! Atomic energy at last! The words fairly shrieked through his brain. But what of it? It was too late to do anything. Besides, that terrific power couldn't be controlled. He'd almost forgotten that. It couldn't be controlled!

He grabbed a long buckler-like sheet of lead which had a hand-grip on one side of it. It was convex and was as tall as a man, and resembled the shields which archers of a forgotten antiquity had used. It would protect him from the dangerous rays.

He held it out in front of him and peered through the glazed peep-hole which was on a level with his eyes. The bottom of the furnace must have melted away. There was a dazzling mass of bluish incandescence visible beneath the lead shields around the caldron-like piece of apparatus. It was hissing and spitting like a violently active chemical. The steel floor was burning! And the atomic fire was spreading—consuming everything in its path! In a few minutes the whole ship would be a fiery mass of incandescence!

Sark Ahar stared wildly about. What should he do? Try to save himself, try to save Aggar Ho? It was better to freeze than to burn to death.

His eyes fell on the dials of the control board. Though Aerth's satellite was now, of course, invisible, he could tell by the delicate instruments that the ship was hurtling along at a terrific rate only five thousand miles from the moon! Its course was parallel to the lunar surface.

A CRAZY idea, that marked him forever as a genius, came to Sark Ahar. How it was born no man may tell. Quick as a flash he gripped the steering lever and swung it around a full quarter turn. The space flier lurched, then it swung inward and headed straight toward the moon, falling more and more rapidly every instant!

"Aggar Ho!" shrieked Sark Ahar, "Come down! Quick! You do not wish to burn!" Carefully manipulating his big protecting shield so that it was always between him and the rapidly spreading conflagration at the center of the room, Sark Ahar made his way to the spiral stairway. He saw the old scientist descending.

"Get a lead shield in the upper store-room, Aggar Ho," he cried. "Else you will be killed by the rays. Come quickly."

In a moment the Martian was with him.

They followed another downward leading spiral and found themselves in a cylindrical room that housed a tiny torpedo-shaped space-flier. Sark Ahar opened a circular door in the side of the craft and thrust the old scientist unceremoniously inside. He followed closely, slamming the door behind him. He dropped into the pilot seat. A turn of a knob, and a door at one end of the tubular chamber that housed the space-boat opened. In a moment the little craft glided gracefully out into the open, free from the blazing sphere.

Sark Ahar allowed the globe to get fully a hundred miles ahead of him in its headlong rush moonward. Then at a safe distance he followed it.

He turned toward Aggar Ho, who was in the passenger seat behind him, "I think I have saved Aerth, Chief," he said. There was a broad smile on his face.

"Saved Aerth?" returned Aggar Ho. "What do you mean? I see that we have released the power which we sought, but that will do us no good now."

"Watch for a little while, Chief," said Sark Ahar.

In the next minute and a half the sphere became a globe of blue-white fire, and presently, after the two Aerthians had followed it in its fall for about three thousand miles, it exploded, sending out its flaming fragments cone-wise toward the moon. The lunar surface two thousand miles below was dimly visible by their light. The pieces of the space-ship glowed brighter and continued their headlong descent. Still Sark Ahar dove after them. In a few minutes the fragments crashed into the satellite, scattering themselves over mountain, crater and dead sea bottom. Nor did their fire die out! It increased in intensity fed by the fine sand which covered most of the moon. It was spreading rapidly, enveloping everything in its path.

Sark Ahar was smiling. "Do you understand, Chief?" he asked.

Aggar Ho had completely forgotten his habitual calm. "I do!" he cried. "You meant to kindle an atomic fire on the moon and make it take the place of our sun! And you have succeeded!"

The two men returned to Aerth. Within three days the moon's surface had become entirely incandescent. A week later Aerth was much the same as it had been for thousands of years except that the spring crops had been destroyed and almost half of the population had perished. But nature quickly mends and forgets such calamities. In the long course of cosmic history they are common.

Since the moon travels slowly in its orbit in the same direction that Aerth revolves, the days were, of course, a trifle longer.

Aggar Ho predicted correctly that in fifty years the sun would absorb its enveloping cloud, and would shine with greater intensity than it had for countless ages.

Ten thousand years afterward, throngs of eager travelers still came to Panenbu to view a majestic work of art which awoke in them admiration for a great man of the past. At the pinnacle of what had once been the landing tower of the observatory stood a colossal statue. Across its breast was ingraved the inscription: "This is Sark Ahar, native Aerthian who saved Aerth."

THE END.

Too Many Boards

By Harl Vincent

Author of "Barton's Island," "The Seventh Generation," etc.

"WHY not take your medicine and have it over with, Larry?"

The words were gently spoken by Arthur Hovey, who sprawled lazily on a divan in his friend's luxuriously appointed apartment.

Laurence Conover cut short his restless pacing and crushed a half-smoked cigarette in the already heaping tray. For a moment he glared at the speaker. Then he smiled grimly and shrugged his shoulders.

"Guess I'll have to," he admitted.. "Odds against me are too great. But it burns me up. I've only two months, too."

"Yeah. Two months." His friend gazed dreamily at nothing in particular.

Art Hovey was that way. Larry's companion since boyhood, he had ever been easy-going—a dreamer too. Larry, though two years his senior, was more impetuous, the leader in all their youthful adventures and leader still, having attained the presidency of the corporation for which Art worked as a department manager.

"It isn't that I dislike Alta Farrish," continued Larry, "she's a good friend. But, hang it, I don't want to marry her. Guess I'm old-fashioned. But I'd like to go back about a hundred years to the days of Lindbergh and Gene Tunney and Owen D. Young. They did things in those days. And they didn't have their every conscious act controlled by legislation.

"They had prohibition."

"You would bring that up. That's what started the whole business, too. The gloom-dispensers got away with that and they've gotten away with murder ever since. But our Board of Eugenics beats anything they ever cooked up. I rebel against having a bride forced upon me. Think of it! I'm two months short of thirty-two and have to marry before my birthday. Have to! And not outside of class A2."

"What's the matter with A2? There's only one higher class, and it with only eighteen members."

"Nothing the matter with it. But I haven't found romance in my own rating. I want to choose my own mate; court her as they used to; take her away from someone if necessary. What do I care about their intelligence tests, their blood counts, and other ratings? Maybe our ancestors didn't raise a regulated number of kids; kids who wore thick glasses at five years of age and quoted Ovid as ours do today. But they loved and hated normally; played and fought, and got a kick out of life. How're you going to do it today?"

"Can't. But it's a pretty good old world at that. Better than Mars or Venus."

"Sure it is. But that's not the point. It's this infernal regulation of everything. The Martians and Venetians were used to it. So was most of our old world population. But heritage of freedom and independence taken from us. And to some of us it comes pretty hard."

"But we don't do anything, Larry."

"No. A lot of sheep!"

"You couldn't do anything anyway. Alta's guardian, you know."

"I know. John X. Mills votes fifty-one per cent of our stock. And he's set on the match. Otherwise there's a lot of other A2's I might look over in two months."

"Still thinking of romance?"

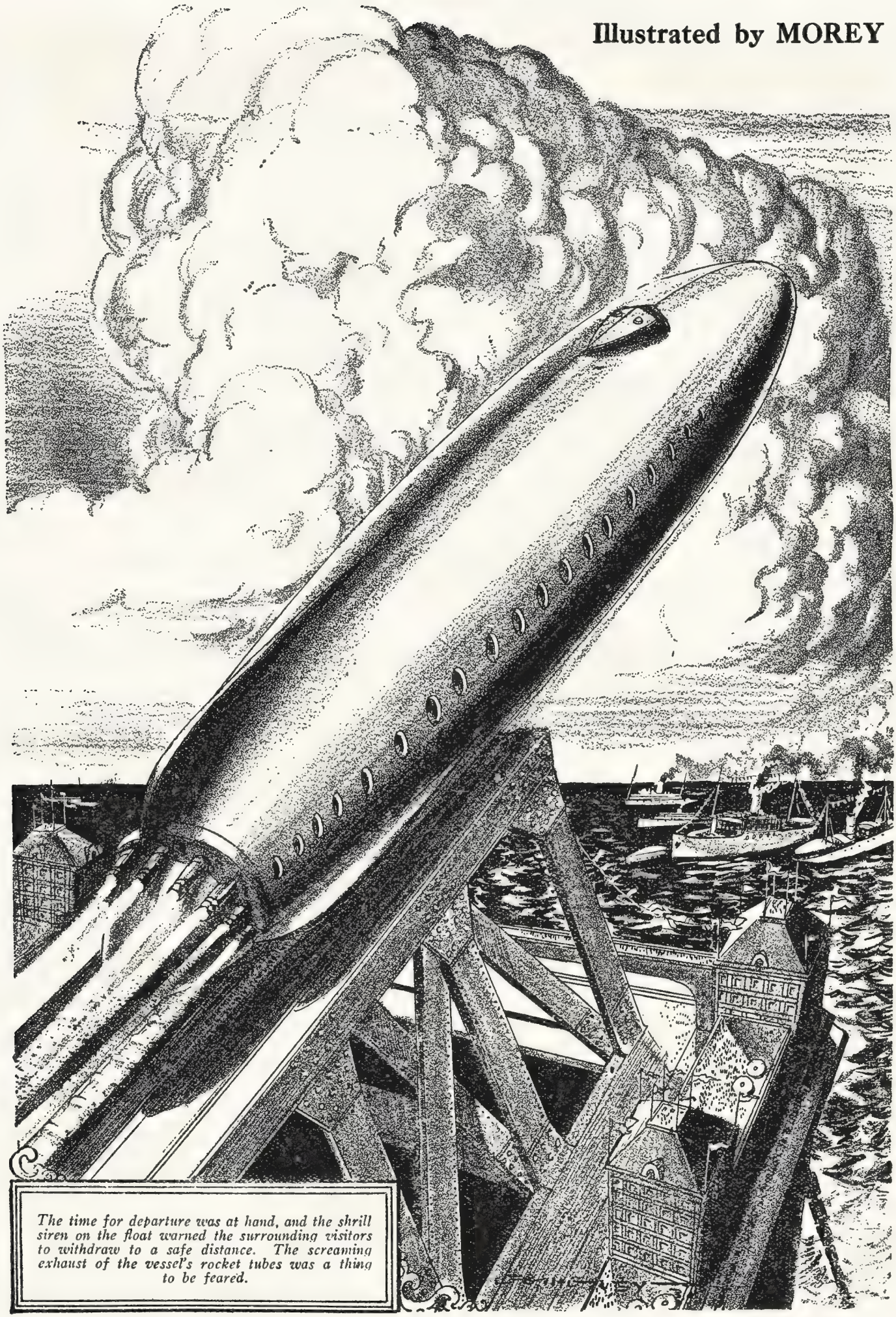
Larry laughed. "Good old Art," he said, "Romance means nothing in your life, does it?"

"Not a thing."

Arthur Hovey gazed reflectively at the swarms of darting aircraft high above the crystal expanse of New York's roof. These visits to Larry's apartment were his greatest joy. Here he could lie in the light of the sun. He could revel in its warmth as it came through the fused quartz covering of the homes of the wealthy and influential in the topmost level of the world's

SINCE time immemorial, it seems to us, man has rebelled against every tendency toward what seemed to him an infringement of his personal liberty. But in every age some new law seems to be invented specially to increase man's misery. The next line of action seems to be beautifully laid out for us already—that is, the next really important change. But that—and the author tells about it in this story—will probably not go through, however, until life has become somewhat more standardized, which, on the other hand, can't be so far off at that.

Illustrated by MOREY



The time for departure was at hand, and the shrill siren on the float warned the surrounding visitors to withdraw to a safe distance. The screaming exhaust of the vessel's rocket tubes was a thing to be feared.

greatest city, one hundred and ten stories above ground. It was great! Cares and dissatisfactions seemed of no consequence.

NEXT morning Larry sat at his desk and stared disapprovingly at the pile of work that lay before him. He glanced at the calendar. Fifty-nine days left! He rang for his secretary.

"Miss Henderson has resigned, Mr. Conover." The voice of his chief clerk spoke from the optophone, simultaneously with the appearance of that individual's alert features in its disc.

"Resigned? Wasn't she satisfied?"

"Yes indeed. Board of Vocational Supervision derated her and she was ashamed to remain with us. She's taken a lesser position elsewhere, Sir."

"What? Can't we determine the fitness of our own employees!"

"Yes sir. That is, I mean, no sir. The Board is sending a substitute at once.

"Oh damn the Board!"

The startled face of the chief clerk vanished from the disc.

For a long time Larry scowled at the silent instrument before him. Boards, Boards, Boards! There was a Board for almost everything, it seemed. Well, there was nothing he could do. Might as well submit to the inevitable. He was only a cog in the huge machine that moved at the command of the terrestrial government. A fairly easily-worked cog it was true, but immutably fixed in position and function. What was the use?

The optophone spoke. "Miss Sinclair to see you."

"Miss Sinclair?"

"Yes sir, from the Board. Applying for Miss Henderson's place."

"Oh yes. Send her in."

Larry was utterly unprepared for the vision of loveliness that met his eyes a moment later. His heart skipped a beat, and he sprang from his chair with unconcealed eagerness. Then he caught himself short in embarrassed realization of the situation.

"Miss Sinclair?" he faltered.

"Yes, Mr. Conover. Una Sinclair, VR1869."

"Never mind the numbers. You're an experienced secretary?"

"Five years with the Board of Tri-planetarian Communication."

"Another Board, so help me!"

"I beg your pardon."

Larry chuckled. "Don't mind me, Miss Sinclair," he apologized. "Think you'd like to work for United Synthetic Food?"

"I'm sure I would."

"Very well. Tell Mr. Sprague I've put you on. He'll arrange your salary with you. Then return to me for instructions, please."

When Una Sinclair tripped from the room, Larry took up the nervous pacing that was becoming a habit with him. Not such a bad Board at that, this vocational one!

"I'VE found her at last."

Ten days had passed, and Larry was again entertaining Art Hovey in his apartment.

"That's no news. Una Sinclair, isn't it?"

"Of course."

"How about her B. of E. rating?"

"A2. I wanted to do a handspring when she told me."

"Easy now, Larry. You're getting all excited. And, quit your eternal tramping. Don't you know that old man Mills is getting set for your marriage to Alta?"

"Sure, but I'm going to call it off. Right now, too. over the opto. Alta'll be tickled silly. She doesn't want me any more than I want her."

"All the same, you can't do it, Larry. Mills'll break you. United Synthetic will hit bottom in this crazy market, if he starts unloading. Then where'll you be?"

"Hang it! I'm in love, I tell you. What do I care for the money? I can earn a substantial living. Maybe have to live in level forty, but what's the difference?"

"Have you asked Una?"

"Not yet. But there've been things—more than mere hints. I'm pretty sure she'll have me."

"With your money gone?"

"Another crack like that, Art Hovey, and I'll crown you. Una isn't that sort."

"Sorry, Larry. I know it. But you're in for trouble, do you know that?"

"Trouble? If there's to be any I'll start it right away."

Larry turned to his optophone.

"Hello Laurence," came the hearty voice of John X. Mills, when his ruddy features materialized on the disc, "what brings you to the opto on a rest day?"

"It's about Alta, John. The wedding's off."

Larry spoke crisply and the bristling eyebrows of John X. Mills raised in surprise, the red of his round cheeks deepening perceptibly.

"What do you mean, off? Everything is arranged."

"I know it and I'm sorry, John. But I have other plans. My decision will come as a relief to Alta—you know that."

"Come, come, my boy. Don't be hasty. That new secretary of yours has turned your head."

"Perhaps. But this is final." The conversation was growing distasteful to Larry, and Mills' appearance of imminent apoplexy made him want to laugh.

"Final? Final? I'm not sure of that, Laurence. At any rate, you'll not marry that red-head in your office." The disc went dark, for Mills had disconnected.

"Red-head! Red-head!" yelled Larry to the unresponsive instrument, "You old fossil!"

Then he stared foolishly at Art, who remained calm and wholly undignified where he lay stretched among the cushions.

"Told you so," his friend remarked soothingly.

THE die was cast, and Larry hastened to be sure of Una. He rushed from the apartment, leaving Art to shift for himself. Panicky doubts assailed him when he entered the uptown pneumatic tube and took his place in the bullet-like car that would whisk him to the upper reaches of Westchester Borough. He had been rather hasty and abrupt with Mills. Should have talked with Una first.

The girl, he thought, greeted him with some indication of constraint, but he imagined this to be due to the fact that this was his first visit to her modest eighteenth-level apartment. She flushed as prettily as ever when she pressed his fingers, and he plunged headlong into the subject of his chaotic thoughts.

"Una," he blurted forth, "I love you, and I want you

for my wife. In these past few days you have become to me the essence of all that is worth while—the——"

She dropped weakly into a chair as he spoke, and a look of fear widened her eyes. "But Mr. Conover—Larry—" she protested

"I know dear—it is short notice. But this thing is real with me. I can think of nothing else. And somehow I've come to believe that you reciprocate. Am I wrong? Don't you?"

"No—no—it isn't that!"

"What then? There's no one else?"

"No one. And—I do care—but——"

Suddenly the girl was in his arms—weeping uncontrollably. She clung to him in terror, it seemed. He had not been wrong. But the depth of her feeling frightened him. He sensed calamity.

"Larry," she finally whispered, "I do care for you. More than you will ever know. But we can not wed."

"Can not wed? But why? Why?" He held her at arm's length and his heart sank at what he saw written on her blanched features.

"My eugenic rating—it—it——"

"But it's A2. I saw your card."

"It *was* A2, Larry." She was quieting now and spoke with hopeless finality, "But now it is F2. Day before yesterday I took my annual test and I just received notice this morning."

"There isn't any 'F' grade. Only the five letters and their sub-numbers. You must be mistaken."

"It's the new classification. Something to do with pigmentation, they tell me. Guess it's my freckles." And she smiled bravely through her tears.

Larry raved. These rotten restrictions again! But he had never anticipated this, and had entirely forgotten the added classification. To think that Una, of all girls, should be reclassed! He thought darkly of Mills and his threats. But this was no doing of his. The Eugenics department was incorruptible. Besides, it had been done two days ago. But how Mills would gloat over him! Suddenly he stopped in his tracks—he had been walking the floor again, he realized shamefacedly—and wrinkled his brow in thought.

Una regarded him kindly and sympathetically from where she sat. She was as crushed as he, but, being a woman, was more resigned. Her heart ached more for Larry than for herself, and she longed to pillow his head on her knees and mother him. He was such a big overgrown boy!

"Say!" Larry's forceful exclamation startled her. He was at her side in a single bound and squatted beside her chair. "Are you game to elope with me?"

"Elope? We can't. It is impossible to be legally married in either Earth, Venus, or Mars. Where else is there to go?"

"Mercury!"

"Larry! It has a terrible climate and is—oh—uncivilized. Besides, its government is unrecognized by the Tri-planetary Alliance. We'd be exiles in an awful land where we could never live in peace."

"Honey—listen! It's just the opposite. I've a very good friend, Chic Davis, who's captain of the Rocket III, one of the Tri-planetarian liners. He tells me Mercury is the finest of all the inhabited bodies. It's terrifically hot on the side always toward the sun and frigid on the other, but there's a narrow belt where the climate is moderate—semi-tropical by earthly standards. And it's not uncivilized, but highly cultured. They've a real democratic government there and aren't members of the Alliance only because it's their own desire to remain aloof. Our rigid laws and the resulting standardization of types, habits, and activities of our people are distasteful to them. But Chick's been there and he says it's ideal—the very place for such as we. We could be free and untrammeled—happy."

"But the liners are not permitted to stop there."

"Good reason. The allies fear their population would be educated to a spirit of revolt if they saw too much or knew too much of the conditions on Mercury. So they permit no voyagers to land there. But I'll bet I can get Chick to smuggle us in somehow. He's a great schemer."

"It seems so—I don't know—barbaric somehow. Are you certain of all these things your friend has told you?"

"Absolutely. Chick hasn't a reason in the world to misrepresent it to me. And there aren't barbarians there, sweetheart. They are a kindly people, and wise—too wise to mix with the others of the outer planets. I'm sure we'd be welcome. And I'll work; I'll break my neck to make you happy there. What do you say?"

"You almost convince me." Una's eyes were starry. They now visioned a ray of hope.

Larry drew her fiercely close. "You've got to, honey," he begged, "it's our only chance. Six weeks you know and I've got to marry—someone in A2—someone I don't love. Else it's the penal colony of Mars for the rest of my life—laboring on the canals. I swear I'd rather——"

Una placed the tips of her warm fingers over his lips. "Don't say it dear," she whispered. "It isn't necessary. I'll go. I'm not afraid. And, oh Larry—I—I need you."

Wordless happiness crept in to replace the erstwhile gloom of the tiny apartment.

THE Rocket III was berthed on her huge float, fifty miles off Montauk Point. A monster dirigible from the mainland had just discharged its cargo, the highly concentrated liquid explosive which provided tremendous propulsive energy for the liner in limited storage space, and was headed for home. Scores of smaller private aircraft hovered at a respectful distance, awaiting the take-off of the great vessel—a sight they had come hundreds, even thousands, of miles to witness.

Captain Davis stood at the hyper-optophone in the control room of his space ship. He had reported to the Board of Tri-planetary Transportation in Washington that all was well for the one hundredth voyage of the Rocket III. He grinned when he turned from the disc. The Board was due for a surprise this trip.

The published passenger list had carefully omitted the names of certain of those actually aboard. Captain Davis had seen to that, as he had seen to the obtaining of Una's and Larry's passports, ostensibly for a trip to Venus. Other essential matters there were too, that had required his personal attention. But it was a job that Chick Davis liked, for he doted on romance. Besides, he scented an unusual adventure.

The time for departure was at hand, and the shrill siren on the float warned the surrounding visitors to withdraw to a safe distance. The screaming exhaust of the vessel's rocket tubes was a thing to be feared, an incandescent blast that could wither and destroy the greatest of the ships of the lower air.

With its five hundred feet of glistening length resting in the chute, its blunt nose pointed skyward at an angle of thirty degrees, the Rocket III was a thing of beauty, a monument to the genius and scientific attainment of mankind. But, when the mighty energies were released from within, it became a monster of terrifying power, a mechanism that went roaring into the skies ahead of a trail of blinding magnificence, splitting the protesting air with a screech whose intensity was beyond all belief.

Precisely on schedule, the Rocket III hurled itself into the heavens. When the last vestige of its flaming tail had vanished, the awed spectators turned their ships homeward, stunned and silenced by this marvel of the twenty-first century.

Far outside the earth's atmosphere the vessel straightened away on its course and settled to its carefully regulated rate of acceleration. The captain was entertaining a much excited couple in his cabin.

THERE was consternation in the despatching room of the Tri-planetarian Transportation Board in Washington. The Rocket III had long since left her berth and the engineers in charge had observed her progress on the chart for more than ten million miles. Then the tiny light-point of red that traveled so slowly from the blue-white representation of the earth's orb flickered and went out. Frantic efforts to raise the ships hyper-optophone failed utterly, and the chief despatcher made haste to report the calamity.

Every available space-ship of the terrestrial government was pressed into service and the liners of the Tri-planetarian system already in transit were advised by optophone to keep close watch for the wanderer. But little hope was entertained of locating the vessel in this manner. In the vastness of space even the largest of liners was an infinitesimal mite, and, with its opto inoperative, became but one of myriads of tiny bodies that hurtled through the blackness at enormous speed.

The nature of the disaster which had overtaken the Rocket III could but be conjectured. Nothing of the sort had occurred during more than thirty years of continued interplanetary service. Great fear there was in official circles that the vessel's fuel compartment had exploded. Though such an accident was deemed highly improbable, it was not beyond the bounds of possibility, and it was an undoubted fact that something of a serious nature had happened to the mighty vessel of the skies.

Efforts were made to keep the news of the disaster from the public, but, as is usually the case, there was a leak. Within a very few hours the public and private news optos throughout the world blared forth the incredible tidings. Frantic relatives and friends of the more than twelve hundred passengers and three hundred members of the crew besieged the various departments of the terrestrial government in Washington for confirmation or denial of the terrible news. In the lower levels of the great cities, the public squares were jammed with horror-stricken humanity, waiting in vain for definite assurance from the news announcers.

Hour after hour the vigil was kept and eventually the reports of the government scouting ships commenced coming in. But these held forth nothing of hope. There was but one chance in many millions that trace of the lost ones would ever be uncovered.

But the officials of the Board refused to give up their vessel as lost, though hoping against hope. Its captain, Charles Davis, was the most resourceful and experienced in the service. They could not conceive of him as unequal to any emergency which might have arisen.

ON the planet Mercury an unusual conference was in progress in the executive chambers, or Dairofa, in Luzan, the capital city of the realm. In the great plaza before the palace there rested a space ship of strange design, a small and sleek craft that had been the subject of discussion throughout the city during the twelve aka (about six and one-half earth days) since its arrival from afar.

The huge blood-red disc of the sun shone hotly at the horizon, its almost horizontal rays making of the city a motley of sweltering high lights and dark shadows. Rose tinted mists hung low over all, effectually obscuring the heavens above. It was always thus in Luzan, the sun never leaving the horizon entirely, but circling it once in every eighty-eight earth days and alternately rising to a point that exposed the lower rim of the enormous disc, then sinking to a point where the topmost edge just peeped through the mists above the undulating line of demarcation between land and sky.

Suddenly there came from above a fearsome sound, a screaming roar that brought the populace to the streets and the officials and their subordinates from the palace. Once, twice, thrice, the sky was shot with a blinding stab of light. A huge shape swung into view through the mists. Another and larger space ship! A moment it poised at the edge of the plaza, then swooped to a landing and rolled slowly to a lumbering stop.

The assembled Mercurians stared agape when the main port was opened and the gangplank lowered. Never before had one of the huge liners of the Tri-planetarian Alliance made actual landing on the globe. Murmurs of surprised interest greeted the appearance of the only three visitors to disembark from the giant vessel—a girl, a young woman of fragile and delicate mold by Mercurian standards, and two men who were likewise of terrestrial littleness in stature.

"CAREFUL now, you two," Chick Davis warned, as Una and Larry edged gingerly along the gangplank, "it'll take you a little time to get used to the lesser gravity and rare air. Though you weigh less than a third of what you do on earth, the slightest effort will exhaust you here. So, just take it easy."

Una laughed nervously. "I feel as though I could leap across the plaza," she said.

"You could—nearly," agreed the captain, "but, until your lungs are accustomed to the change and your heart to the extra load imposed by the scarcity of oxygen, you'd better not try anything of the kind."

"Say Chick," exclaimed Larry, "that's a terrestrial government ship over there. Wonder what's up?"

"Probably they've been searching for us since our optophone went out of commission. Guess I'll be in for an argument after a bit. But they can't prove anything. That reminds me too—better find the trouble now and report our whereabouts." Captain Davis winked and grinned as Larry turned a scared face toward him.

"They'll discipline you, Chick."

"Let 'em. I wouldn't have missed this for anything. I've had a circus on this trip. And I guess I can square myself."

Una drew back suddenly in alarm, grasping Larry and pointing a trembling finger. "Look!" she gasped, "There's John Mills!"

It was incredible, but true. On the platform facing the plaza there stood a group of Mercurian officials and with them were four terrestrials. One of these, a pudgy human with ruddy countenance, was undoubtedly John X. Mills.

Larry groaned, then stiffened in anger. "Miserable swine!" he snarled. "Been spying on me and learned my plans! I'll show him!"

So quickly did he move in the direction of the triumphantly leering financier that his leap carried him a distance of thirty or more feet. He lost his balance and sprawled ignominiously at the edge of the platform. John X. Mills laughed.

Chick Davis was at Larry's side in an instant, and, as he helped him to his feet he hissed, "Keep your shirt on, you idiot! We're in a jam. Got to be diplomatic."

Una hurried to join them, her breath coming in painful gasps. She wanted to cry. Larry grumbled sheepishly as she made nervously ineffectual attempts to dust his clothes with her handkerchief.

Captain Davis strode to the center of the platform and faced the Dairo, president of the Mercurian high council, speaking rapidly in Termarven, the universal language which had been developed when interplanetarian communication was first accomplished in 1988.

"Your excellency," said Chick, "I am captain of the Rocket III. A disarrangement of our electrical system partially crippled the vessel and it was necessary for us to land here to make repairs. Meanwhile I learned that these two young people of our world were endavoring to escape persecution in their own land. They wish to marry but cannot on account of one of our rigid laws—the Eugenics Act, with which you are undoubtedly familiar. I beg of you that they be permitted to make their home here and to wed in accordance with your laws. They freely renounce allegiance to the terrestrial government."

"I remember you, Captain Davis," replied the Dairo. "You have visited us before, though you have never honored us by landing your vessel. But I cannot accede to your request."

"Can not? There is no treaty. Mercury is independent of the Tri-planetarian Alliance."

"True. But a minor agreement has just been signed with representatives of your government. We have agreed that all terrestrials who might visit our globe are returnable at the demand of your government and are subject to your laws for so long a time as they remain with us. However, if your ambassador agrees, we will welcome this man and woman."

Larry understood Termarven but imperfectly and he stared from one to the other of the speakers in uncertainty. Una clung desperately to him.

The Dairo indicated one of the four terrestrials, a pompous individual who bowed ceremoniously at the acknowledgment.

"Hjalmar Nordstrum, Captain," he said, in English, "at vour service."

"You heard?"

"I heard, Captain."

"He lies!" croaked Mills. But Nordstrum frowned him into silence.

"Captain," said the ambassador, "it is impossible to grant your request. As you know, we have been trying for years to come to an understanding with the Mercurians and this mission of mine is the latest attempt. It has succeeded thus far, and the preliminary treaty is an entering wedge that we can not afford to nullify by an immediate violation of one of its provisions. I must further remind you, Captain, that you are subject to disciplining for landing your vessel here."

"I'll take care of that, Mr. Ambassador. But, may I ask you who was the instigator of this special mission—who wrote this clause?"

"Why—why——" The ambassador flushed and John X. Mills coughed warningly.

"Ha! I thought so!" Chic Davis glared at Mills belligerently, then disdainfully at Nordstrum. "No wonder the Mercurians have always refused to treat with us, when our government sends such as you to deal with them. Don't see why they listened this time."

"Sir! I'll have you broken for this! I—I—" The ambassador was sputtering with rage. Mills grasped his arm and whispered in his ear.

Larry was doing his best to comfort Una, who had buried her head on his shoulder. The Mercurians watched silently, the Dairo stretched to his full seven feet of dignified stature, arms folded across his broad chest.

"I demand their arrest!" shouted Mills. "The girl and Laurence Conover. They are fugitives from justice. Attempting to evade both the Compulsory Marriage Act and the Eugenics Act. I'll appear against them before the Boards."

The ambassador nodded agreement and the remaining two terrestrials advanced toward Una and Larry, flashing badges of the Secret Service. Larry's muscle tensed in his fury and Una gripped him more tightly.

"Don't dear," she whispered, "Please—for my sake. It'll only be worse for you."

Chick Davis paused uncertainly, then turned on his heels and rapidly made for his vessel, covering the intervening distance with a peculiar shuffling lope that was admirably adapted to the gravity conditions.

"Chick! Chick!" called Larry.

But his friend continued on his way. Bitterly Larry watched him go. He'd deserted him, and in the time of greatest need. But, after all, what could he do?

Larry's muscle relaxed and Una sighed her relief. The officers were upon them and she had been horrified at thought of the result of resistance on his part.

"A MOMENT please," asked the Dairo. "Do I understand that these two are to be arrested and returned to Terra to stand trial?"

"It is our law, your excellency," replied Nordstrum.

"A strange law it is that separates lovers so obviously suited to one another. But I presume that your solons know best. I do not profess to understand, but would know more regarding the circumstances. Shall we retire to the Dairofa and discuss the case in detail?"

"As you wish, excellency." The ambassador was chagrined, but could do naught but acquiesce. Mills fidgeted and fumed.

Larry pricked up his ears over the Dairo's speech. The sympathy of this president of the Mercurian council gave him renewed hope. He would present his own case. There still might be some way in which that cursed treaty could be abrogated. But that forlorn hope was quickly blasted when the Dairo addressed them from his place at the head of the council table.

"The treaty stands," he said. "It has been officially signed and sealed. But I feel that we are entitled to the facts of this unfortunate case. Our people will question the justice of such a procedure as is proposed and apparently necessary. We must be prepared to satisfy them as to the wisdom of our judgment in carrying on this and future negotiations with the outer planets."

"We understand, honored Dairo," smiled the ambassador. His precious agreement was safe. "But I must ask Mr. Mills to give to you the complete history of the affair. I am unfamiliar with the details."

John X. Mills cleared his throat. This would be somewhat difficult, as he spoke no Termarven and would have to tell his story to the interpreter. The members of the Mercurian council cast solemn yet kindly glances on Una and Larry when Mills pointed an accusing forefinger at the couple.

"These two—" he began. But there came an interruption.

A page advanced hurriedly to the council table and the Dairo motioned Mills into silence.

"Captain Davis," announced the page, "demands admittance."

The Dairo brightened. "Send him in," he ordered.

The conversation was in the Mercurian tongue and Mills stood perplexedly silent. But Larry had caught the name of his friend and guessed at the meaning of the interruption. He squeezed Una's hand joyfully. Good old Chick! He hadn't left them after all. And somehow he felt that things would happen quickly now.

Chick Davis advanced to the council table with a broad grin on his face. He was accompanied by two terrestrials, a man and a woman.

Larry craned his neck to see who they were. Art Hovey! Why, the big stiff! He had been on the Rocket III—and never looked up his friend. What did it mean? And the girl! Alta Farrish! He blinked his eyes in amazement.

"Alta!" gasped John X. Mills, "what are you doing here?"

"That is what I intended asking you." She smiled sweetly, but it seemed that she drew a bit closer to the side of Arthur Hovey.

Larry was completely mystified. But he felt an almost uncontrollable impulse to laugh aloud in this great domed chamber. One more shock like this and Mills would surely die of apoplexy. His purpled features and bulging eyes would have made a horse laugh.

The irate financier forgot himself. He forgot that he was in the presence of the nobility and the highest authority of a strange planet.

"What do you mean?" he roared. "Am I not your legal guardian? Who gave you permission to leave home? Answer me!"

The Dairo frowned in annoyance, but he did not interfere.

Art Hovey stepped forward, keeping Alta in the background. "You are speaking to my wife, Mr. Mills," he said quietly.

There was a momentary silence. Then John X. Mills far outdid his previous efforts. He shook his fist in the face of the young man who had so calmly announced the preposterous affront to his authority. He ranted and stormed.

The Dairo pounded vigorously for silence. This terrestrial was insufferable.

Ambassador Nordstrum spoke sharply to his compatriot and Mills subsided, mopping his perspiring brow with a large silk handkerchief. He wished he had these two youngsters at home.

"AMBASSADOR," asked the Dairo, "will you be so kind as to request the young people to present their side of the story? It seems to be much involved."

Nordstrum translated rapidly and Art Hovey stepped to the table. Larry regarded him in astonishment. Guess he hadn't known his friend as well as he thought. Such a transformation he had never considered possible. The usually phlegmatic Art was supremely confident; dominant; compelling. He directed his remarks at the ambassador.

"Mr. Nordstrum," he said, "you have been hoodwinked by Mills. He has used this mission as a means to a personal end. His sole object in appealing to Congress at this time was to prevent the marriage of my friend to the girl he loves and force him to marry the woman who is now my wife. John X. Mills is a scheming and unscrupulous rascal."

"I am beginning to believe that is true," interjected Nordstrum. This thing was a sorry mess. He felt suddenly ashamed.

"I know it is true," continued Art, "for I have investigated and have learned many things. For years I have loved Alta Farrish, his ward, but I never courted her, for Mills had planned her marriage to my dear friend, Laurence Conover. I thought she cared for him and that eventually he would submit to Mills' wishes. But my friend had other plans and I wished to help him, so I set about to learn the true state of affairs. First off, I found that my fondest dreams were possible of realization. I—" He hesitated and glanced at his bride for approval. She nodded happily.

"Anyhow we were married—perfectly in order—A2 classification and everything. But my friend, to be happy, must escape the laws of the three outer planets. He planned to settle here in Mercury and found a way to reach this planet. But I learned that Mills had been watching him by means of the detectoscope—had followed his every movement. So I watched Mills. I discoverd the machinations he used in engineering this official mission to the inner planet. So I followed on the Rocket III, though my friend did not know I was on board. I wanted to surprise him—here—to be of some assistance should it become necessary."

"Art, you're a brick!" exclaimed Larry. He could scarcely credit his senses. To think of Art doping this out—fooling him!

"But I haven't told you the worst." Art paused dramatically. "Mills not only deceived my friend; he deceived his ward. The stock he votes in United Synthetic Food is but half his own. The other portion is Alta's. He voted it by proxy and has forged papers which convinced her that he could thus control it until her marriage. This has been the club he held over Larry Conover and over his ward to force the union he planned—a union that interested him only because he thought it would permit him to retain control of the vast business he has dominated for so many years."

"Liar!" grated Mills. But his tone was far from convincing.

"It's the truth. Here's the proof." Art handed a sheaf of papers to the ambassador, who scanned them carefully.

Larry could have kicked himself. Fool that he had been not to investigate the matter himself!

"Mills," said Nordstrum sternly, "he's got the goods on you. I'd keep my mouth shut now, if I were you. I'm through."

He turned to the Dairo. "Your excellency," he said, "I offer humble apology. I find that this young man speaks truth and that I have been deceived into becoming an unwitting party to the selfish scheme of my countryman. On behalf of my government I now propose to cancel the treaty we have signed, if it be your desire that this be done."

John X. Mills slumped low in his chair and stared at the floor. He seethed with rage. Yet he dared not retort.

"Ambassador," announced the Dairo, "you have acted in good faith and we blame you not for the deeds of this—this member of your party. It is thought best, under the circumstances, that the papers be destroyed and the incident forgotten. The young couple who are not permitted to wed by your laws may remain with us if they wish. There is no bar to their union here."

The interpreter repeated his words in English and the five terrestrials from the Rocket III gathered in an excited huddle losing all interest in the ceremony of destroying the agreement.

Chick Davis could not restrain a joyous "Hooray!"

"YOU old fox!" exclaimed Larry, gripping Art's hand tightly. "You sure did put it over on me. And boy, you saved the day."

Una clung to her lover, an unaccountable lump in her throat. She was happy to be with him, happy in the knowledge that nothing now prevented them from joining their lives. But somehow she was frightened; homesick. She saw the disapproval of her own kind in the eyes of the Mercurians and she feared they would not be as welcome as the Dairo implied. But she would stick to Larry through anything. He was all that mattered, after all.

"But Art," objected Alta, "we can't leave them here. We must have Larry in New York. United Synthetic Food depends on him, and so do we. The reorganization—we must vote our stock with his to keep control and to save the business from my guardian. Besides, I don't think Una likes it here as well. I know I didn't."

"You forgot," said Art, "the classification—Una's derating."

Here was a facer. Larry looked into Una's eyes and saw that what Alta said was true. She didn't like it in Luzan! Matter of fact he wasn't so hot for it himself. It had sounded better when Chick told about it. Lord, what a mess! But he'd stay in Hades to have Una.

Art's usually placid brow was furrowed in thought. Good old Art! He had come through in a blaze of glory. Didn't think he had it in him. Guess Alta'd pepped him up. He had something to work for now. Imagine—holding secret his feelings for her—all these years.

"Psst! Una—quick!" Art was whispering in her ear, "Your Board of Eugenics tag—give it to me. Got an idea."

Wonderingly she took the tiny silver chain from her wrist and handed it to Larry's friend. Carefully he examined the markings on the surface of the little tag. Then he strode to the council table.

"Your excellency," he said, when the Dairo greeted him, "May I ask one question of John X. Mills?"

The request was quickly repeated by the interpreter and the Dairo signified his assent.

Art advanced to the now cowering financier. Ambassador Nordstrum groaned. What revelation was coming now? Wasn't it bad enough now without further fuss? The mission was already a failure. But this young Hovey seemed to know his business.

"Mr. Mills," said Art in a steely voice, "you know Raymond Phelps, do you not?"

Mills dropped his eyes. His high color faded to a sickly mottled pallor. He stammered unintelligibly but did not reply.

"Answer him, Mills," warned the ambassador.

"Yes—I know him," breathed the thoroughly frightened man.

"You bet you know him!" Art's voice rose in anger. "Know him too dam' well. And you bribed him to derate Una Sinclair—an official of the incorruptible Board of Eugenics! But you'd corrupt a saint. You did it. Now—didn't you?"

The pudgy hands of the financier twitched nervously where they gripped the arms of the chair. He half rose from his seat, then fell weakly back.

"Did you, Mills, did you?" The ambassador's voice was chill. "You miserable skunk—answer!"

But John X. Mills was unequal to speech. He stared in terror at the livid face of the ambassador and nodded his head in agreement.

"Good Lord!" Nordstrum was aghast. To think that he had assisted this dirty hound! "You'll pay for this, John Mills. And, right now, your first act is going to be a full and complete confession to the Manager of the terrestrial government—over the optophone. Get me? March now! By George, you'll not only confess, but you'll go back with me—under arrest. Subsidize our officials, will you? Furthermore, we'll have Miss Sinclair reinstated in A2 at once. This vile scheming of yours can no longer affect them. These two young people can be married immediately—on the Rocket III if they wish—Captain Davis has authority."

He propelled Mills from the room ungently, the Mercurians looking on with open approval. Chick Davis indulged in an undignified jig.

"Boy, you're a marvel!" Larry hugged Art gleefully. "And, I know who our new Vice President in charge of sales is going to be. You could sell ice to the Eskimos."

Alta gurgled her approval. She knew that Art had it in him. Poor boy! He'd always kept himself in the background—and on her account. Things would be different now.

Una didn't know whether she wanted to laugh or cry. It was all too good to be true.

AMBASSADOR NORDSTRUM was as good as his word, for within the space of a very few minutes he returned from the government vessel with news that Una's reinstatement was already approved. He personally voided her tag and wrote a temporary certificate of classification.

Alta pleaded for her guardian, and, eventually, Nord-

(*Continued on page* 89)

Perfect timing—the hand of the man on the wing—grips the hand of the girl on the sill; a leap, a tug, and there are two now on the wing.

NUMEROUS meteorites have fallen to the earth. The great majority of these have been absolutely harmless and tell us little from a scientific point of view. If some enormous masses of meteoric substance, metallic and mineral, could come through space, why is it not possible that other massive substances might come through intelligently directed—provided, of course, that there is some intelligence to direct it? The great Spiral Nebula, seen in the beautiful Andromeda, nearly a million light years distant from us, in perpetual gyrating motion, very likely hides many a humanly unfathomable secret. These authors have built up an extremely interesting theory of what they think might be possible in Andromeda.

The Menace *from* Andromeda

By Nat Schachner *and* Arthur L. Zagat

Illustrated by MOREY

WITH a puzzled frown, Donald Standish looked up from the photographic plates in front of him to the patch of dark blue heaven visible through the half-opened dome of the Mt. Wilson Observatory. There floated the enigmatic nebula of Andromeda—the huge telescope probing directly toward it—as if to pluck out the very secret of its being. He arose, and paced the confines of the huge room. Under thirty, clean cut in features, he had already earned an enviable reputation as an astronomer, which had won him a coveted place in the world famous observatory. From the very beginning, the great nebula had exercised a peculiar fascination over him. In some inexplicable way Standish had always felt that there lay the secret of the universe waiting for him in the rôle of a Perseus to deliver and bring forth.

In truth, many other contemplative observers had speculated about that faint, dusty patch of light sprawled athwart the enchained and enchanted body of the legendary daughter of Cepheus and Cassiopeia. For centuries men had pondered in vain, seeking the nature of that faint light-cloud which so persistently evaded their probings. It was not until recently, with the great advance in the manufacture and use of precision instruments and telephoto lenses, that the astounding truth had been revealed to startled astronomers—this faint glimmer in the skies is a great island universe of stars; far beyond the confines of our own galaxy—millions on millions of suns and attendant planets, careening through the outermost reaches of space-time, so inconceivably remote that a ray of light traveling 186,000 miles per second would take nearly a million years to reach the earth.

Standish turned once more to the sheaf of photographs. Yes—there was no doubt about it, the faint pin-prick of light labeled on the sky charts as 12478, which he had himself named Alcoreth, showed an unmistakable increase in brightness in this most recent of his photographs.

For over a year, on every clear night, he had photographed the great nebula. The minute pin-pricks of light, representing huge stars, had been laboriously ticketed and compared. This queer behavior on the part of Alcoreth, hitherto a placid, ordinary star, aroused his interest.

"Something interesting happening to the constitution of that old lady," Donald remarked to himself, meditatively stroking his chin. "I'd better turn the prisms on her and see what's going on in her innards to account for it."

Deftly he adjusted the great spectroscope, and swung it on the errant orb. As he gazed, a startled "Whew" escaped him. These were not the spectral lines and bands customarily associated with hot gaseous stars in eruption.

"This is becoming more interesting—better verify it," he thought. Quickly he took out his series of comparison spectra. None of them checked with this spectrum.

Again he arose, and paced the room. This was evidently not a burning sun. Apparently it was a relatively cold mass. What then was it? Was it shining by reflected light? But, he argued with himself, there was no sun within billions of miles to produce such a vast outpouring of reflected light. There must be some other cause for its luminosity. Excitedly Standish paced about. Luminescence—phosphorescence. This must be a world composed of some radio-active mineral! He strode back to the spectroscope. No, these were not the characteristic lines of any radio-active mineral known to science. Again he took up his restless pacing. The word phosphorescence brought to his mind pictures of the fields at night alive with the darting sparks of fireflies—of the forests, and the glow of rotting fungus and decaying wood—of the tropic seas under the Southern Cross, criss-crossed with pallid witch-fires.

He stopped short in his tracks. By George, that was it! Life forms—protoplasm—under certain conditions would become strongly luminescent. But no—that was

too fantastic for serious consideration. And yet—and yet. Try as he would to dismiss the thought from his mind, it occurred again and again, until it obsessed him. He must check it, and that this very minute.

In the course of his researches, Standish had discovered that by causing the light of luminiferous protoplasm to pass through a series of gases, the spectroscope was capable of resolving the constituent elements. As yet the process was a guarded secret, but the material was at hand.

With trembling hands the astronomer set up four thin walled transparent chambers, put into each a definite quantity of a rare gas—different for each chamber—attached them in series to the great spectroscope in such a fashion that the light from Alcoreth passed through them, before reaching the prisms that would cause it to yield up its secret.

"What an idiot I am to waste my time on such a crazy idea!" he scoffed aloud, at the same time looking around guiltily. "It's damn foolish, all right, but what's the odds. Let's take a look-see." He inserted a comparison spectrum of the organic elements, carbon, hydrogen, nitrogen, oxygen, sulphur and phosphorus—the essentials of life as we know it on this planet.

With elaborate carelessness, hardly masking his inner trepidation, he gazed into the aperture. The spectrum appeared. A quick look, a longer one, then a concentrated stare—a feverish scribbling of calculations—then he arose with a mighty shout, that echoed from the great white dome. "Eureka, I have found it!" The cry of Archimedes on making *his* famous discovery. The impossible was true. The life elements were all present on that distant star, and what was infinitely more, its spectrum showed the peculiar arrangement of lines and bands which his research had shown was invariably associated with living protoplasm.

His immediate impulse was to broadcast his discovery to the scientific world. But then a thought sobered him. So fantastic a theory would never be accepted unless supported by impregnable proof. Premature publication, and he would become a laughing-stock. No, he must wait until his spectroscopic research was perfected. In the meantime, keep on observing this strange new world.

For three weeks he took innumerable photographs, barely pausing for sleep and food. The star increased in brightness, then tiny streamers shot forth intermittently, then slowly it waned. From a fifteenth magnitude star it passed gradually down the scale, till finally a last plate failed to show any trace of it. Alcoreth was gone, and with her, Standish's hope of everlasting fame.

The astronomer was in despair. How now could he convince the scoffers that he had witnessed the impossible—a world of living protoplasm! His proof was gone.

Yet, when he pondered over it—it did not seem impossible. Life—protoplasm—was only a particular combination of five or six elements. These elements are found throughout the universe. Was it inherently impossible, or even wildly improbable, for these elements to combine in some other world to form living matter, just as on our own earth various elements combined to form the rocks that constitute the structure of the world?

So Standish argued, and thought wistfully of Douglas Cameron, his chum of college days, now a research worker on cancer in an isolated laboratory in the fastnesses of Colorado. He thought of Douglas and his sister and assistant Mary. Those two would listen to his tale of discovery. How he wished Mary was with him now! Well, another month and she would be with him always, his wife and helpmate. He could see her now, the laughing eyes, tilted nose, puckered lips. She was fair to look upon, his Mary, but wiry and strong, and behind that clear brow was a brain which made her fit sister to one scientist and wife to another.

"Well, to work again," he sighed, and continued the search for living worlds.

ALCORETH heaved herself in long undulations that caused a plashing of luminous vibration in the surrounding ether. For Alcoreth was hungry. Eons of slow starvation stretched everlastingly ahead. Already huge vacuoles were dotting her interior, as the plasmic matter shrank and shrivelled away. The food supply was disappearing—no more did rocky crags of green and purple hue rise above Alcoreth's bosom. Only the inner core of minerals remained—and that was wearing dangerously thin over vast subalcorethean fires.

Never to be forgotten was that frightful time when, questing for food to still the retching hunger, she had greedily absorbed too large a section of life reaching bottom rock, and torn through the thin layer.

In an instant, the devastating flames had leaped and seared through the protoplasmic tissue. The very thought of it caused vast shudders to course through Alcoreth. For ages, the hellish fire spewed and roared—devouring, incinerating—bringing the tortures of the damned to her viscid frame. In agony, she heaved and twisted, but to no avail. Her sister spheres gazed on in helpless pity, but could render no aid. That final period—when annihilation seemed imminent—and almost welcome—a slipping of the rocky substratum had miraculously closed the gap, and once again imprisoned the ravaging fires. Slowly, painfully, and with difficulty, Alcoreth recreated sufficient plasma to cover the wounded surfaces; but her marvelous powers of reproduction were lessened. Since that fateful time, she only nibbled gingerly at the food rocks, and the pangs of hunger grew and grew.

Message after message for assistance was sent on ethereal vibration to her sister spheres in that vast universe, and ever and anon some being kindlier than the rest would disrupt a fragment of the precious mineral, and cast it meteor-like through space towards the starving world. But these were mere sops. Alcoreth foresaw the inevitable. Already had protoplasmic worlds come to the end of their food supply, and either broken through to the central fires, and flamed through space like blazing torches to imponderable dust; or, cannibal-like, devoured their own substance—until the last pitiful bit of plasmic intelligence curled up on itself and died.

Alcoreth was determined to avoid either of these fates. But how? For an eon her highly developed intelligence, diffused throughout her structure, brooded over the problem. Speculatively she vibrated in unison with the etheric waves from the galaxy of the Milky Way, of which Earth was so minute a member. A quiver ran through her—causing a strange luminescence to run riot over the surface of her body. The solution was found—desperate, fantastic—failure meant annihilation—but then, so eventually did the present state. So Alcoreth set to work to do what was needful for the great adventure.

In this strange universe, electrons and protons had

whirled just as naturally into the rhythmic forms of life —protoplasm—primitive plasm, as in our universe they had danced into the common rocks and minerals. Here, the first bits of plasma were casual in their beginnings; taking sustenance out of the abundant mineral elements; slowly and laboriously evolving and growing more and more complex through differentiation of structure and function; and culminating in highly complex man. There the cooling mist of electrons patterned overwhelmingly into diffused plasm, with enough of other elements to create a normal food supply. Each world was a living entity; there was no necessity for differentiation of parts; intelligence was inherent and diffused throughout the entire mass, just as is found in the primitive unicellular animals and plants on earth.

The early forms of terrestrial life were able to absorb and digest mineral matter directly. In the universe of Andromeda, evolution had advanced further in that direction. Solid rock was ingested and digested rapidly and easily. Through the eons of time, the vast inchoate consciousness of the mass developed into a highly energized intelligence, that could grasp intuitively problems far beyond our highest flights—and could communicacate with other life-worlds by etheric vibrations. Mental states were marked by tremendous luminosity over the surface of the plasma, which in turn set the ether into rapid vibration.

Alcoreth was busily at work. All over her body, she was rolling up into globules of protoplasm. The surfaces of these hardened into cell walls or cysts. Alcoreth was now disassociated into countless trillions of spores—as we call them. Each spore was in itself a unit of life, in a state of suspended animation; capable of resisting the frigid cold of space; capable of existing thus through countless ages; and expanding into life anew under favorable conditions.

Clerk-Maxwell, the great English physicist, toward the latter part of the nineteenth century, proved that light had a definite propulsive force, and that particles of matter, if minute enough, could be propelled through the ether with tremendous velocities by the electromagnetic rays of light. Svante August Arrhenius, the eminent Swedish scientist, used this discovery as a basis for bold speculation. Was it not possible—he argued—for minute spores of life to pass through interstellar space from world to world, and germinate anew on barren, uninhabited worlds?

All this Alcoreth knew as elemental truths. If only some of her spores could land on some far-off world, unaccountably and strangely formed of mineral matter solely—there to burgeon and grow with lightning-like rapidity in the midst of such plenty—what a marvelous rebirth! For inherent in each spore was the intelligence of the mass, and Alcoreth would exist anew in the alien universe.

Finally all was in readiness. The time for the perilous emprise had come! The teeming aggregate of spores concentrated their mighty intelligence. They heaved and swelled. Weird radiances played over their surfaces. Huge luminous masses propelled themselves into space. Cloud after cloud of spore forms tore themselves loose, and shot forward. The tremendous journey was begun! Never in all the history of the universe was there a stranger migration!

Criss-crossing the illimitable void were innumerable light vibrations. Instantly the spores were scattered in all directions, caught up by onrushing waves, carried along with the speed of light, scurrying towards the uttermost confines of space-time.

On—on—through the illimitable void! Ages—eons—thousands and hundreds of thousands of light years—never ceasing—never slackening in their headlong flight! Past mighty suns—past strange planets—past pale nebulosities—past pallid shapes of interspatial denizens —past rushing comets with hair afire—past meteors, debris of uncounted worlds—on—on! Whole universes waxed great and waned to pin pricks in the darkling void! On! On!

The Milky Way—a bend of light waves past the Sun —the earth planet loomed vast—a gravitational pull was exerted—and a cloud of spores had reached the end of their tremendous flight. Slowly through the warm air they settled and floated and dropped to the surface of the Atlantic Ocean.

"MISSING FISHING VESSEL SAFE IN PORT!

"Lunenberg, Nova Scotia, Sept. 27th AP. The fishing smack Ellen Morse, two weeks past due, docked here this morning with a record catch. The vessel was blown off its course during the storm reported three weeks ago by the remainder of the fleet, and, on the abatement of the gale, ran into an unusually large school of haddock 100 miles off the Banks. She remained to take advantage of the unexpected good fortune. All on board are well.

"The crew report that during the catch a peculiar shower composed of small brown globules fell on and about the vessel. As this occurred at the height of the catch, no specimens of the 'dust' were preserved."

The early editions of one or two newspapers that September morning of 1938 carried this small squib. A commuter or two, traveling long distances, having exhausted the headlines, the sport pages, the stock reports, read it. Then it passed into the oblivion which awaits all such space filling items. No sixth sense, no intuitional alarm bell, warned any reader of the horror which this dust cloud, so casually observed, had brought to earth.

Only in the Mt. Wilson Observatory did one man start on reading the report. Standish, alone in all the world, saw here more than a mere unusual occurrence. And even he could place no great stress on it. A careful clipping of the two inch account, a reference to data jotted down a few weeks before, then the clipping and the few notes in that neat scientific script were filed away.

It was a fair world that the dust cloud had entered. All the nations were at peace and had been for twenty years. The great strides in mechanical and scientific progress of the first two decades of the 20th century had somewhat slowed down. Not yet had the commerce of the world taken to the air. While swift passenger and mail services across the continents and the seas had become commonplace, as yet aerial navigation had not been cheapened sufficiently to remove from the surface the carrying of freight. The life-blood of the nations, the foodsuffs, the textiles, the myriad varied components of commerce, still coursed in the old arteries along the surface of the seas. Still were the harbors of the world crowded with shipping, still across the seven seas plodded in the old slow way the gleaming freight-liners and the tramps. Still across the continents streamed the long freight-trains, mile-long caravans

bearing ore, coal, grain, machinery, food, and raiment that the race might be fed, and be clothed, that man might be housed, kept warm, might live and work.

The year 1938 was ushered out in the age-old flare of horns and carousal, the age-old watch-night prayers, and the fateful twelve-month of 1939 began. Again a newspaper item noted by but few signalled the approach of horror.

"New York—April 3rd—The Hardin Line officers here report that yesterday afternoon, while their private radio station was receiving the routine daily report from the Hardin freighter, *Ulysses,* communication suddenly ceased and could not be reestablished. At the time the *Ulysses* was 50 miles due east of Cape Hatteras. Vessels in the vicinity have been requested to investigate."

Thus it began. The *Ulysses* was never heard of again. Other ships cruising over the position from which it was last reported could find no trace of the freighter, nor any of the usual evidences of marine disaster. Ten thousand tons of steel and wood, thousands of tons of freight, one hundred men, had disappeared without trace.

A month later, another great ship broke suddenly off in the midst of a wireless dialogue and vanished as completely as though it had never been. In quick succession a third, a fourth, a fifth abrupt vanishment caught the attention of the world within a week. No longer was the news relegated to the inside pages of the daily papers, but glaring front page headlines broadcasted the tidings of disaster. Marine insurance rose to exorbitant rates; the navies of the earth were scouring the Atlantic; only the most essential traffic was proceeding. At last the world was aware that something brooded out there in the ocean which threatened the very life-blood of the earth.

One peculiar feature of the disappearances was early noted. The tragedies had occurred in no localized region of the ocean. Plotted on the maps which now appeared on the front page of every paper, it was seen that a broad belt of waters, extending from Nova Scotia on the north to the Caribbean on the south was dotted with the black crosses of disaster. It was as if some tremendous power was erecting a fearful barrier across North and South Atlantic, a barrier which would end the commerce of the centuries between the Eastern and the Western Hemispheres, saying to the trade of the world: "Thou shalt not pass!"

And now indeed the barrier was complete. So rapid had been the multiplication of casualties that by the end of June over a thousand vessels had unaccountably vanished. On July 1, a general order was issued by the Admiralties of every nation forbidding all commercial traffic across the Atlantic. Supplies of food and other necessities were routed across the Pacific, across Asia and Europe to England and the seacoast countries of the Old World. Now, on the broad expanse of the Atlantic, unwonted quiet reigned, broken only by the gray war-craft searching, searching, for what they knew not.

A pall of horror overspread the world. The sole topic of conversation on the street, in business places and in homes was the mysterious barricade across the ocean and speculation as to its cause. In the capitals of the world the heads of governments conferred about nothing else. In the universities, in the headquarters of the scientific organizations, theory and counter-theory were spun as to the nature of this thing which had paralyzed commerce. The attention of all the earth was centered on the great radio towers and the word that came through them from the gray war vessels out on the tossing waters, searching, searching, ever searching for the thing which so swiftly, so relentlessly swallowed up the great vessels and small which ploughed the waves.

Ever there was the same news. Each day the tale was—"Battleship So and So, while reporting all well at such and such time ceased communication. Other vessels in the vicinity have been ordered to investigate." And then, one by one, the other vessels, too, would drop out of sight, never to be heard of again.

On the newspaper maps it was noted that the belt of black crosses widened and lengthened, extending ever closer to the shores of the Atlantic. And the horror deepened—blacker was the dread of the people.

ON the thirty-first of July the first faint intimation of the nature of the menace reached the world. The United States naval station at Arlington reported that while in communication with the U. S. S. *Texas* it had received the following messages:

"From NXL Lat—Long—10:12 A. M. July 31, 1939. "First officer reports iridescence covering entire surface of ocean to east and extending north and south as far as horizon. We are proceeding closer."

"From NXL Lat—Long—10:15 A. M. July 31, 1939 —are now nearing iridescence. It is sweeping toward us——"

Here communication ceased. The *Texas* had joined the long list of missing ships.

Hurriedly summoned into radio conference, the scientists of the world discussed this meagre report. A veritable babel of conflicting ideas, of fine-spun theories, of concepts old and new wove back and forth across the ether.

The least regarded explanation of the phenomena, the most derided, was the exposition by the astronomer of Mt. Wilson of his theory of an invasion of protoplasm in spore form.

In the streets of the cities wild-eyed ranters appeared at every corner. To excited, pallid crowds they raved of the judgment of God upon an evil world, of the second coming of Christ (or Buddha or Mohammed), of the end of the earth. As yet only those whose intelligence was of the lowest took stock in their dire predictions, but Hysteria, with staring eyes and wind-tangled hair, strained at the chains with which civilization had bound her.

The world will long remember the morning of August 5th, 1939, when the full nature of the Menace burst upon it. All that had passed before paled into insignificance at the startling news from Florida. That state of palms and oranges, that winter playground of the idle rich, no longer exists. But its name will long remain in the minds of man as the region where first the Menace came upon the land.

Baking in the glare of the August sun, terrifically hot, though still but an hour above the horizon, a small group waited on the platform of the ramshackle station of St. Nicholas, a few miles inland. Southern railway schedules were proverbially elastic and thus little thought was given to the fact that it was a full half hour past the time when the west-bound "number 9" should have made its appearance. The station-master (baggage-man, telegrapher, porter, etc.) had reported that the wires were down to the east but this was a none too rare occurrence. The talk was, of course of the vacant Atlantic

(for now even the searching warships had been withdrawn—and the horror which had cleared it of shipping.

"It's my idee," quoth the village druggist, who was on his way to Jacksonville for his monthly buying trip, "It's my idee that the Germans are gonna start another war and they've got millyuns of submarines out there. If I was President—What the heck is that up the track!"

The oracular dictum was interrupted by the appearance to the east of a hand-car on the rails, traveling at the uttermost speed of which this conveyance was capable. It was being operated by one man, and his frantic heaving at the pump handle gave evidence of more than ordinary haste. The four-wheeled platform fairly flew along the steel pathway—"Jingo Neddy, he's clippin' it some!" "Who is it, kin you make out?" "It's Bob, the agent at Pablo Beach—musta been a wreck!" "What's he yellin'?"

There was time for but a few startled observations when the hand car had already reached the station. Its operator, pale, disheveled, staring with panic, shaking in an ague of fear, was shouting "Run, run, it's coming. All gone, all gone, wiped out. Oh my God. Get 'im all out. Run, run!"

That fateful morning of August 5th, the little town of Pablo Beach; one of the many which once dotted the East coast of Florida, just waking to another day of toil, had been overwhelmed by a tremendous mass of quivering jelly suddenly heaving itself out of the ocean. "It was higher than the biggest house in town, and it stretched along the shore as far as I could see. It quivered like jelly, and it rolled—it rolled on up the beach and over the houses and the people. Everybody run toward it at first, only me, and I would have only 'number 9' was due, and I had to stick by my key. Everyone run toward it, and it just rolled on and over them. It 'peared to move slow, but it must have been coming fast 'cause, when the folks started to run away from it, it just kind of sent out part of itself a bit faster, and it caught them. God, it was terrible. Just before I grabbed the hand-car and got away it caught Pop Saunders, the postmaster. I saw it catch him. It just kind of heaved, and swallowed him up. I saw him inside of it, just like a fly in calf's foot jelly, just as clear, with his mouth open, and his eyes staring, and his legs kicking and his arms working, but his kicking and squirming didn't bother the thing any. And then his face kind of run together till it was just a blotch—and that's all I saw!"

In London, in Berlin and Paris men stopped their midday occupations to read aghast the story of the Florida station-agent. In New York, Boston and Baltimore the wheels of industry never started that day, as the office workers, the laborers, and the corporation presidents were halted on their way to their day's occupations by the dread tale. Sleeping Denver and 'Frisco waked to nightmare terror by the shouting of the extras in the streets.

In the Mt. Wilson observatory Donald Standish, keeping his sleepless vigil at the eyepiece of his beloved telescope, was startled by the ringing of the "emergency news" bell on the broadcast receiver in a corner. Hurriedly switching on the speaker, he heard the terrible tale. "Gosh! I was right."

The stars were forgotten now. Standish joined the world in anxious waiting for the next report. It came:

"U. S. News Service. Bulletin 25—The governor of Florida has mobilized the militia and troops are already moving rapidly toward Pablo Beach. Federal aid has been called for. The Secretary of War has ordered all available regulars with railroad artillery, flame-throwers, and gas projection apparatus to the threatened region. It is confidently expected that all danger will be over shortly."

"U. S. News Service. Bulletin 26.

"Troops have now arrived within a mile of the infested territory. Infantry is being deployed, armed with gas bombs and flame throwers. The 16 inch railroad guns are being prepared for action."

"Bulletin 26a.

"Artillery is now firing high explosive shells into the advancing mass. Infantry is rapidly approaching within range."

"U. S. News Service Bulletin 27.

"Artillery fire is utterly ineffective. Its only result is to hurl great globs of the jelly into air. They fall on the advancing infantry and envelop them. The loss is appalling. Indescribable scenes of horror are being witnessed. Even before the enfolded soldiers cease their struggles against asphyxiation their forms begin to melt away. They appear to be digested by the jelly. The big guns have been ordered to cease fire. The effect of poison gas which is being released in great clouds is now being observed."

Donald could restrain himself no longer. "Fools," he burst out. "All their big guns and their gases will never stop that stuff. Some scientific method of attack must be found."

The next bulletin proved him right.

"Poison gas has no effect. Flame-throwers wither the jelly where they reach it, but on both sides of each point of operation the mass continues its relentless march. Reports reach us now that the east coast as far north as Charleston has been invaded."

Donald burst out again. "We must find a way to stop the advance of the jelly, and then to kill it. Perhaps Doug will have a notion. He ought to, he's been working with cells long enough. I'll call him. Besides, I haven't spoken to Mary since noon yesterday."

As the astronomer made his way to the personal communications set, the call light on that device began to flash. He answered it. "Mt. Wilson Observatory, Standish speaking." "Professor Standish, this is President Adams' office. There will be a radio conference of scientists in half an hour. You are requested to listen in." "Right."

"Now to get Doug," rapidly whirling the dials to Cameron's wave length.

Quickly the connection was completed. "Hello Doug, did you get the news? They know now that I was right. What, you haven't heard! Might have known nothing matters to you but your blasted cancer. There soon won't be anybody left for you to save from cancer. Get this——"

In quick, succinct phrases the savant outlined to the bacteriologist the tale of horror which was echoing round the earth. He did not get very far, however, for an exclamation of horror stopped him. As he listened to the broken phrases of Cameron, the tanned face of the astronomer paled with horror. His knuckles whitened with the force of his grip on the receiver.

"What's that? Mary flew to New York yesterday to get you some pigments. Man, don't you realize that

it's a matter of hours till the protoplasm visits New York. Get Mary back at once.

"Damnation! You can't? The radio on her phone is out of order? How was she flying, by sight? Can't you reach her? No? Then I'm going after her. The devil with the conference. One hair on Mary's head is more than the rest of the world to me. You'll go with me? Get ready then, I'll make it as fast as I can."

In a trice Douglas' flying suit was on, the hangar's doors were opened, and the trim little sport plane zoomed up to the 5000 foot speed level, then like an arrow flew to the east.

Meanwhile message after message of terror had been winging its way into the ether. All the east coast of Florida, Southern Georgia, the Carolinas, Virginia, in rapid succession had seen the creeping, iridescent terror. Resistlessly out of the sea it was heaving, twenty-five feet high, hundreds of miles long, this vast jelly-like tide of destruction. It was as if the sea had congealed and was making a final triumphant drive for mastery over its eternal enemy, the land. With the inevitableness of fate itself the thing rolled up, enevloping all that opposed it, enfolding the shrieking mobs which tried to flee before it, and, most horrible of all, *digesting* them.

IN New York the streets were packed with pale-faced throngs. Although every home had its receiver, the desire for the companionship of others had sent the entire population into the streets. The public loudspeakers, the newspaper bulletin boards were the nuclei of the masses. As one item after another of disaster was broadcast by the news-purveying agencies, a groan would rise from the crowds and then silence would come again. For these were silent crowds; the magnitude of the calamity had stricken the people dumb.

Forcing her way through the packed masses and into the hundred story tower which Columbia University had just occupied, was Mary Cameron. Astounded on her arrival by the terrific news of calamity, she was anxiously intent upon completing her errand and speeding her plane back to her brother. But tremendous difficulties had delayed her. Traffic was well-nigh suspended. It had taken an enormous bribe to persuade a taxi-driver to undertake the journey from the Governor's Island landing field, through the vehicular tunnel and up Broadway to the new educational centre in what had been Central Park. Held to a snail-like pace by the masses which packed the streets from building line to building line, the trip had taken hours. But now, at dusk, she had reached her goal.

The great building was deserted. But the doors of an elevator stood open and she could operate the simple mechanism. Swiftly she rose through the hundred floors of this latest apotheosis of education to where, in the very tip of the soaring tower, Cameron's home laboratory was located. She unlocked the door, and entered the room. Quickly dropping her close-fitting cap and leather flying suit she began to assemble the bottles and jars listed on the slip which she had brought from the mountain retreat she had left the night before. But the strain of twenty-four hours of flying by sight and of the terrific scenes she had just witnessed suddenly told on even her wiry constitution, and she dropped into a chair for a moment's rest. She closed her eyes—in a moment she was sound asleep.

Startled awake by a roar which, ascending from a thousand feet below, rattled the windows with the force given it by millions of throats, she found the room glowing with a green and spectral light. The usual murmur of the great city had changed to a terrific tumult in which she could sense a terrible agony of fear even at this Alpine height. She ran to the window. Night had fallen, but it was not dark. From far below came the green light, a glowing luminescence, which reminded her of some rotting fungus which she had one night found in the woods near Cameron's laboratory. The glowing material made a gridiron there beneath, filling the streets south and west, till it merged in sheets of green flame where she knew the harbor and the rivers lay. Immediately beneath her the streets were still clear, but bathed in that unearthly light she could see black streams. In the cupboard she knew her brother had a pair of binoculars. Quickly getting them, she focussed them on the black streams. She saw people, thousands, tens of thousands, rushing north, shouting in a frenzy of terror, and there, only a little south, the glowing green light pouring up the streets, towering far above the hurrying struggling mobs, moving with incredible swiftness, engulfing the stragglers. The menace had reached New York!

She swept the glasses north whence came a rolling as of thunder. Far up the Sound she could see flashes—the forts at the upper end of the city were fighting their big guns. South again, and below, quiet now, the glowing jelly had filled the streets. New York was dead.

"Well, I'm in a fine fix now! I'm safe enough here, but how am I going to get away. Probably starve to death. Well that's better than being swallowed up by that thing down there."

A terrific crash downtown came to her startled ears; then almost before she could turn, another, and another. Down on the tip of the Island, where first Manhattan had reached toward the sky, there was a clear space where the 85-story Bank of Manhattan building had been. Woolworth too was gone, and all the mountainous structures below. As she gazed she saw the 150-story City Hall Tower, just completed, sway, then, like some giant of the forest felled after centuries of growth by the woodman's axe, topple over, and gathering speed, crash into the lambent sea which bathed its foot. As it struck the surface of the quivering flood of light there was a tremendous splash, and through the air for hundreds of feet flew huge glowing fragments. They fell on the roofs and the serried façades of the buildings for blocks around, and then, to Mary's horror, they spread, and wherever the patches of light lay the sturdy structures of steel and granite began to melt.

"Good God! I'm not so safe after all. The ghastly stuff eats even the material of which these buildings are made. I wonder how long this place will last. I guess it's finish for me."

ALL this time the yellow sport plane had been rushing across the continent, sliding down the radio beacon from New York. Intent on the path ahead, the two leather clad figures bent over the dashboard. No talk, for the muffler had been cut out for greater speed. No talk, but the thoughts of the two were identical. "What's happening in New York? What's happening to Mary? Is she safe?" Over and over these thoughts reiterated themselves in the weary brains. These two great scientists, in whose intellects lay perhaps the saving of the world, had forgotten everything save that wisp of a girl in New York, sister of one and sweetheart of the other.

At last the Appalachians appeared, passed beneath them, fell away behind them. Night had come. Donald who had yielded his place at the stick to Cameron, suddenly clutched his companion's arm and pointed ahead. On the horizon there pulsated a greenish glow. Standish's mind flew back to that star in Andromeda, whose passing he had watched months before. Here again he saw the light whose components he had analyzed in his gas spectroscope! The plane was headed directly for New York, and straight ahead of them the luminescence was at its brightest!

Ten minutes now, and they were circling over the great city. From the bay to Westchester, from the Palisades east to the sea, the city was invested. As far north as the ridge of giant erections about 42nd Street the smooth expanse of the phosphorescent sea told of the progress of destruction.

Cameron reached for the lever which silenced the roaring exhaust of the twin engines.

"If only we're in time; if only she is still in my lab. I'm going to go on past the windows and see."

Throttled down to its slowest flying speed, the little plane dipped gracefully past the doomed tower rising high above the glowing rectangle of the park. Not twenty feet from the tower it glided. And there, in the window which both men sought so eagerly, was the figure they had hardly dared hope would be there!

Up again then for consultation. "Doug, how close can we get to that window?" "I'll get within a foot, or we'll all go to hell together." "Then do it, and I'll get her out, but first tell her what we plan. Get a flashlight; she knows the Morse Code. Remember how I used to signal her in the old days?"

"A long slow glide now, about 500 feet away, lucky that your window faces the park." Cameron obeyed, while the astronomer flashed his dots and dashes. "On the sill, ready to jump." A wave of the brave little hand signalled understanding. Then up again.

Up to 5000 feet and a mile away. Then while Standish creeps out to the end of the wing, the motor is shut off and a long glide begun. Down, on a long slant, straight for that pinnacle rising sheer ahead. Down, ever down, with increasing speed hurtles the plane. A miracle of accurate steering, another miracle of perfect timing, and sheer muscular strength are required. Stark courage from all three, or the gallant attempt at rescue must end in disaster. Will they, can they do it? Too near—and a crash; too far and a new attempt cannot be made. For see, already the great tower sways with approaching dissolution.

Perfect aiming, the plane almost grazes the side of the tower. Perfect execution—a hundred feet from the window on whose sill Mary stands, one hand clinging to the sash, the other outstretched; the ship dips, then suddenly rising, almost stalls directly opposite the opening. Perfect timing—the hand of the man on the wing grips the hand of the girl on the sill; a leap, a tug, and there are two now on the wing. Frantically Cameron works at the controls; frantically the lovers cling to the taut surface of the fabric on which they sprawl. Overbalanced, the craft reels drunkenly. Then the roar of the motor, the wings grip the air, and all is safe.

As Cameron zoomed upward, the hundred-story University rocks in ever-widening arcs; then slowly, slowly it begins to fall. Intact, entire, as it had for so short a time soared over the City, so it falls. Slowly at first, then with gradually increasing speed the great structure falls, until with a rush almost too fast for the eye to follow, it crashes into the lucent tide.

Into the little cockpit tumble the lovers, trembling, exhausted with their supreme effort. Cameron too, is trembling, but he must guide the ship with its precious freight. Westward now they turn, westward through the horrible night.

And now for the first time, they can look about them and take stock. The air is thick with darting planes, fleeing westward from the scourge. Below them not a house that is not ablaze with light, not a highway that is not jammed with rushing conveyances, not a railroad which is not crammed with hurrying trains, westward every one. Looking behind, from north to south, in the wide sweep which their height of 7000 feet allowed them, nothing but that terrible spectral green light, nothing but that immense sea, not of water, but of all-devouring jelly, come across the vast infinity of interstellar space to harry the earth and conquer it. And overhead the velvet black sky, and the stars, gleaming still in the wide arch of the heavens as they did when Earth was a whirling mass, as they still shall when this ball is nought but a cold, dead thing.

"Switch on the communication receiver C; let's hear what the news broadcast says."

"U. S. News Service. Bulletin 1248.

"The entire eastern coasts of North and South America are now completely covered with the jelly. Extent of the investment from ten miles to twenty-five. Spain and southern France are being slowly covered; the rest of the western coast of Europe penetrated only from a mile to five."

"U. S. News Service. Bulletin 1249.

"The scientific conference is still in session. No solution has as yet been arrived at, but the chairman wishes to announce that the people of the earth need not despair; progress is being made. Donald Standish, the noted astronomer, is still unaccountably missing. It is requested that any one having information as to his present location communicate at once with 2 AG, the government intelligence station."

Mary turned to Donald, in whose arms she was still being tightly held. "Oh Don, why did you leave your post for me. The world needs you, why did you leave it for me?"

"Dear, if you had gone, the rest of the world could have followed for all of me. But now, now that you're safe, we must get back. I've got a hunch that Doug and I together can arrive at the right thing to do. We can't land now. Once down in that mob we'd never be able to take off again. Besides, neither of us can think straight just yet; too much has happened in the last thirty hours. We'll soon be home now, and we'll get busy. Drive her, Doug."

Now the sun had overtaken them and a new day was begun. Close ahead rose the peaks of the Rockies, among them the mountain on which perched Cameron's wilderness laboratory. A long spiral, and the little ship of the air dropped gently on the landing field at its door.

The passengers debarked stiffly from the flight plane, then Douglas taxied it into the hangar. Emerging promptly, the three of them entered the house.

PHYSICALLY exhausted as they were by the long journey, there was yet no thought of sleep. They were still shaking with the horror of those frightful scenes they had so recently witnessed.

Mary was tottering with weariness, but held herself bravely. Not for worlds would she permit her lover to see how near the verge of hysteria she was, now that the danger was past. She looked around the long comfortable room—cheery fireplace and all—with a shudder. How peaceful and quiet everything was—and over there—nameless horrors out of hell—the indescribable stampede of maddened humanity—the hideous screech of some poor devil engulfed in the advancing monster—no, no!—that way lay madness—she must stop.

Donald was watching her anxiously. "Mary, you must get some sleep at once."

"I'm all right—just a little attack of nerves," she smiled wanly. "Don't trouble yourself about me; I want to help, too."

"We'll puzzle this out ourselves, and when you wake, if we've evolved any ideas, we'll let you in on it. Now, be a good girl and go to bed. Haven't you something soothing in your lab?" he turned to Douglas.

"Certainly; just the thing for you, Mary." Douglas went to the cupboard and poured out a small tumbler full of a pale liquid. "Just drink this down, and you'll slide so smoothly into the arms of Morpheus, the next thing you'll know the birds will be twittering in the trees. Here you are; take it."

"Mary looked at them both for a moment—saw the worry in their eyes, and capitulated. "All right, boys, if you insist; though I'm sure I can be of help." She drank the potion, and retired to her bedroom.

The two men filled their pipes, and settled back in their chairs. Their bodies were poisoned with fatigue, but their brains were racing keenly. For a while they smoked in silence, gratefully inhaling the fragrant fumes.

Standish was the first to break the silence.

"As you know, Doug, I have a theory that accounts for this demoniac visitation, but when I sprang it on the conference, I was laughed at for my pains."

Douglas looked at him keenly. He knew his chum, and knew that he was not given to hazarding wild hypotheses unless they contained a solid substratum of truth.

"Go over it again," he said quietly. "I promise to listen with an open mind."

Donald launched again into his tale—the strange living star in the island universe—its explosive disintegration into space—the queer dust cloud of tiny globules reported by the fishing smack—followed by the appearance of this horrible amorphous life-mass that was threatening to engulf the earth.

Cameron listened intently. Thoughtfully he drummed with his fingers on the arm of his chair. He, too, was familiar with the hypotheses of Clerk-Maxwell and Arrhenius.

"There is a good deal of plausibility about your theory," he acknowledged thoughtfully, "and it accounts also for the vast proliferating powers of this monstrous mass—no life as we know it on this planet could even approximate the uncanny speed of its growth, nor have our primitive life-forms the ability to subsist on inorganic matter to quite the extent that it has," again absently drumming on his chair.

He relapsed into brooding thought, Standish looked at his friend, but forebore to say anything. When Cameron was on the verge of something brilliant, he always drummed. So the astronomer waited.

The break was not long in coming. Douglas' brow suddenly cleared—a look of triumph gleamed in his eye.

"By George, I have it!" he almost shouted. "I believe your fantastic story, old man, and I'm going to rid the world of this menace. Listen to me for a moment."

"You have my closest attention."

"Suppose we assume the truth of your hypotheses. Then this living world, moving in the Andromeda universe, shining by its own luminosity, separated by unthinkable distances from any hot gaseous star, would naturally be accustomed only to the faint starlight of the heavens. No such blaze of light as even our ordinary sunlight ever came within its ken. Now you've heard of phototropism?"

Standish nodded his head, but his friend went on heedlessly, absorbed in the plan maturing in his mind.

"It's the reaction of protoplasm to light," he explained. "If you take any unicellular animal like the amoeba, and expose it to a strong light, it will shrink away from the source of the light, and try to get out of its path. If you use a powerful ray of concentrated ultra-violet light—the reaction will be much more apparent—the amoeba will literally run for its life—and if exposed long enough to the rays, will die.

"Now if we can obtain such drastic results with life forms inured and habituated by constant exposure to the sun's rays continually beating upon our planet, what about this alien protoplasmic mass, unaccustomed to strong light of any kind, and no doubt feeling irritable even during our normal sunshine?"

Standish sat up excitedly. He was beginning to catch the drift of Cameron's reasoning.

Douglas went on. "My plan is this. Have the nations of the world concentrate their technicians and engineers in the power plants and factories most remote from the menace. Construct huge searchlights of the utmost candle power; and machines for casting enormous beams of ultra-violet light. In the meantime have the people of the areas endangered by the billowing march of the monster retreat to the mountain fastnesses. That can be done fairly easily—its progress from all reports is approximately ten to fifteen miles a day. When all is in readiness, mount our machines on tractors, and drive them in front of the encroaching fiend. When it comes within striking distance, turn on the juice full blast. The power will come by tuned radio waves from the power plants operating in the hinterland. If our theories are correct, on the impact of our rays, the viscid mass will react much more violently than an amoeba or paramecium would. Retreat would be all it would think of, and the more exposed masses would be killed off. In that way, we could get rid of the menace, or at least drive it back into the ocean, by following it steadily all the way."

Standish got up in enthusiasm, and rung Cameron's hand. "Boy, you're a wizard! That's a marvelous scheme! You'll be the savior of the world!"

"Hold on a moment," Douglas smiled protestingly, "it may work and it may not. Remember, I'm basing my scheme on your hypotheses."

"It'll work all right," retorted Donald confidently, "and now I know I'm right, too."

"Don't run away so fast," warned the bacteriologist. "Remember, at the best, we shall only have managed to drive it back to the ocean. Once there, we can do no more. There, in the vast depths of the sea, with what we know of the rapidity of its procreation, it will once more overwhelm the world."

Douglas groaned. "There you go—get me all excited, and then you let me down. I forgot that part. So what's the good of your swell scheme?"

"Ah! but I have something else up my sleeve," grinned his companion. "You know, of course, that I've been working my head off trying to find a cure for cancer. I haven't succeeded as yet—though the outlook is promising. But in the course of my researches, I've invented a technique for excising cancer growths from the living organism, and growing them independently in special culture media. I have also discovered a method of activating them so that when replaced in living tissues they will multiply with unbelievable rapidity. At present, I have on hand here in the laboratory about fifty pounds of activated cancer cultures, and that is sufficient for my purpose.

"Now to get back to your theory again. If this visitation is in truth from an alien world, it is highly improbable that it was ever exposed to the disease of cancer. If that is so, then it lacks whatever immunity our life has obtained through constant exposure, and the cancer cells will spread like wildfire through the whole vast organism—and this malign influence will be eradicated from the face of the earth."

"Man, I repeat—you're a wizard!" The astronomer pumped his hand violently. Then an idea struck him. "But why not spray it with cancer immediately—why bother with ultra-violet light to drive it into the depths of the sea."

"Because," explained Douglas patiently, "cancer is no respecter of persons, and once let loose on land, it is liable to spread to all forms of earth life, and we shall only have succeeded in destroying ourselves too. In the ocean, however, the range is sharply limited—we shall instruct the people of the earth to remain inland until the danger is passed. Once killed, the whole mass will descend to the floors of the seas and there the cold and pressure will destroy the cancerous tissues."

"You've thought of everything," was the admiring retort.

"Now to get into immediate communication with the conference chairman and unfold our plan."

"Right—there's not a moment to lose. The fate of the world is in the balance."

In a few minutes, the radio transmitter was sputtering out the code call signal of the conference. A lapse of five minutes and word came back. "Radio Emergency Conference talking—what is it?"

"Standish sending from the laboratory of Cameron in Colorado. Plan for combating menace has been evolved. Please connect me with the chairman." Then, for a solid hour across the ether vibrated the saving word.

Back came the answer. "Sounds all right. Our last hope anyway. Broadcasting immediately to all the nations to mobilize tractor, searchlights, ultra-violet apparatus. United States will mobilize on eastern length of Appalachian within twenty-four hours. Both of you report for service immediately at Allentown, Pa. Last reports show inundation extended as far as Scranton. Signing off."

"We need some sleep—let's snatch a few hours—and start," suggested Standish.

"Righto, we can get there in fifteen hours. We'll need only an hour or two for assembling our material here. That gives us plenty of time for a snooze."

Almost instantaneously, both were sleeping—drugged

WHEN they awoke, it was dusk. Mary was still asleep—a peaceful smile flitting over her lips. Donald looked at her tenderly. "Let's not disturb her. Poor girl—she has been through hell." He brushed her forehead lightly with his lips, and the smile grew into ecstacy, but still she did not awaken.

"Now to work!"

They hurried into the laboratory. Standish opened the door of a huge glass-lined oven, thermostatically controlled at blood heat. In the interior were twenty or more glass dishes, each containing a mass of tissue floating in culture media.

"These are my cancer growths," he explained. "They will live indefinitely in the cultures. Now to activate them so that when we cast them into the protoplasmic horror, they will grow and proliferate with extreme rapidity."

He turned to a row of glass stoppered bottles on his laboratory shelf, and took one down. It was filled with a pale green liquid. Carefully, with a pipette, he dropped five drops into each dish. A slight bubbling ensued —and then ceased."

"Bring that cabinet in the corner over here," he ordered, "and all the cotton wool you find in the end cupboards."

The cabinet was opened—a layer of cotton placed on the bottom—the cancer dishes placed carefully between layers of the soft material, and then the whole affair hermetically sealed.

"Now we're ready to go."

The two men quickly and silently donned their flying suits, and in short order the plane was trundled out of the hangar; the cabinet was carefully lifted into the cockpit, and they took their seats. The motor roared; and the plane took off on its flight across the continent.

Next morning, as the first rays of dawn appeared over the serried tops of the Alleghany Mts., the haggard, wearied travelers descended stiffly from their plane after landing on the air field outside Allentown.

For a moment they gazed about them in dazed astonishment. The place was seething with activity. Hundreds of planes were landing on all sides; tractors were lumbering and roaring over the field, soldiers and vast crowds of workmen swarmed in organized disorder.

"Where is the commander?" asked Donald of a big burly sergeant actively engaged in expending a stream of profanity at a company of men unpacking a huge searchlight.

"Over there!" He jerked a thumb over his shoulder toward the hangar at one end of the field, without deigning to turn around; and with hardly a pause in his flow of lurid objurgations.

"Come on, Doug let's report at once, and see what we can do."

At the door, they gave their names to the guard, and were ushered in immediately.

Seated at a rough pine board table, hastily built to function as a desk, was General Black, grizzled veteran of the World War, now commander-in-chief of all the American Armies! Officers dashed in—came to stiff salute—reported in staccato accents—received their orders even more crisply—and dashed out again. A field radio receiving set whined. The general put the phone to his ear. "What's that—only thirty miles away! All right—report every fifteen minutes on its progress."

Turning around, he saw the two scientists. "Yes what is it? Make it snappy!"

They introduced themselves, and the general's attitude became more cordial.

"I hope your ideas are correct—if not, we're all doomed." He sighed. "Frankly, I'm not used to this sort of thing—out of my line. Artillery—machine-guns—gas—yes! But not this new-fangled stuff."

"However, we'll soon find out," he continued grimly; "my air scouts report it as only thirty miles away. At the rate it is traveling, it will be here in forty-eight hours We'll be ready for it in about thirty-six hours—and then—" he shrugged fatalistically. "In the meantime, I'll get some quarters for you, and you can make yourselves comfortable until we're ready to start." He turned to an orderly, and soon the scientists were installed in a barrack-like room—their plane with its precious freight wheeled into the hangar, and placed under guard.

The next thirty-six hours were filled with feverish activity. All through the day and night, tractors kept coming in—apparatus and the requisite machines were deposited from planes — railroads — automobiles — every conceivable method of transportation.

In the meantime the radio reports were becoming more and more alarming. Inexorably the living tide was moving forward—swallowing everything in its path. Twenty miles away—fifteen miles—activity became frantic—ten miles—five miles—the last feverish touches—and all was in readiness for the supreme effort.

As far as the eye could see, stretched serried ranks of tractors. Along the whole Appalachian range, thousands of tractors were ready to go at the signal of command. On each was perched a powerful searchlight or violet ray machine capable of casting directional beams over a ten-mile radius. The final orders were given—everyone not directly concerned in the management of the apparatus was sent to the rear.

It was the zero hour!

Already in the distance, the horizon was glowing with the dreaded greenish light—the vast menace was flowing—flowing forward.

A hush fell on the embattled array. Could they stop it—was it victory or disaster? The bravest among them felt clammy hands clutching their hearts.

The radio command roared its voice along the far-flung line. The motors roared—the current snapped on—and a blaze of light—intense—penetrating—flared out up and down the line. Another command—and the tractors moved forward—slowly—steadily. A ten-mile zone of intense illumination—blinding in its glare—moved ahead. It approached the green luminescence. Still the monstrous life flowed forward.

Nerves tensed to the snapping points—blood pounded in thousands of hearts—God!—would it have no effect—the life of the planet hung on the next few moments.

The wall of light reached the oncoming wall of alien life—touched it—overlapped it—swung over the top and over its viscous waves. Only three miles separated the opposing forces!

Was it a delusion? Did they see aright? A rustling murmur grew on the scene—a confused Babel of voices—and then—a mighty shout blasted the air—a pean of deliverance—the world was saved!

The oncoming mass had definitely ceased moving—the front reared high into the air—writhing and twisting as though in agony—and then—recession—slow at first—then faster and faster the monster was in full retreat—vainly seeking to escape the deadly rays.

Immediately the jubilant army moved forward—ever concentrating the dazzling light on the discomfited foe. Who thought of food—or sleep or stopping—back into the sea with the monster! For two days and a night, the front of war advanced—steadily the enemy was driven back—remorselessly as ever it had advanced—agonized, writhing before the avenging glare. Once more the face of the earth appeared—but strange, alien in aspect—more like some desolate moon aridly moving through space, than this fair, smiling world of ours. No trees—no houses— no verdure was left; the very surface of the earth was eroded away—pitted and scarred with deep holes and gullies, through which the tractors floundered and pitched.

Back—back through the ruin of what had once been New York—into the sea it was driven—and the world was temporarily saved from overwhelming disaster.

FROM all the endangered nations came the glad tidings of complete triumph. Everywhere the crawling life had been forced into the waters.

Wild celebrations took place among the people of the earth. The names of Cameron and Standish were broadcast to the joyful millions as the saviors of humanity.

But the menace was by no means over—though temporarily subdued. Orders were issued that no one was to approach within ten miles of the seaboards; and the armies of the world were placed on sentry duty to see that the orders were enforced.

At a conference at Pittsburgh, the temporary capital of the United States, Douglas Cameron told of his discoveries in cancer research; his activating principle; and outlined his plan of scattering the tissues of cancer into the floating masses of protoplasm. He was listened to with the most flattering attention. When he finished, President Adams arose, and grasped his hand and then that of his co-worker.

"Gentlemen," he said, his voice quivering with emotion, "you have already placed the world under an incalculable debt of gratitude to you; if you succeed in your present undertaking, and rid the earth of this frightful scourge, your names will go ringing down the ages as long as life exists on this planet. I have placed at your service a cruiser of our air fleet, fully manned and provisioned for a cruise of ten thousand miles. Go and God bless you!"

They bowed their thanks and left the meeting. In less than an hour they were seated in the cabin of the air cruiser, with their precious cabinet at their feet—the crew sprang smartly to their posts—and they took to the air.

The coast was reached in slightly over an hour, and they soon were winging their way out to sea.

The captain came into the cabin for instructions. "Drop to within five hundred feet of the water, and have your crew on the look-out for any traces of the beast. Have the first one to sight it sing out."

"It shall be done," and he retired. The great plane glided down, and whirled over the surface of the ocean. All eyes were strained in eager search.

A shout from an excited lookout.

"The Thing's directly below, sir!" All hands rushed to the side. Sure enough—the surface of the ocean to the east was heaving, and tossing—a weird green light flickered and flared—the sea crawled with the shiny evil Thing.

Quickly Cameron opened his cabinet and gingerly re-

moved one of the dishes. Carrying it to the side, with one quick scoop, he ladled out the contents and threw it overboard. Down it spattered into the jellied mass—scourge set to fight scourge.

For two days, the plane cruised over the broad Atlantic, dropping the seeds of destruction into the bosom of the visitation. When the last dishful had been dispatched on its errand, the cruiser turned homeward. Its work was done. The rest was in the lap of fate.

The people of the earth waited in deep anxiety. Men of science—great biologists—broadcast learned opinions to the listening multitudes.

Daily, clouds of speedy pursuit planes were flung over the broad bosom of the Atlantic to observe and report. Daily they reported no signs of disappearance. If anything, the areas of infestations seemed to be actually increasing. Once more fear reared its hideous head—if the cancerous growths proved ineffectual—it was only a question of time before the horrible Thing would once more approach the shores.

But, ten days later, an observation plane reported seeing hard fibrous growths, like huge warts, covering the surface in one area. Then, in quick succession, other reports came in. The cancer had commenced its deadly work. Within a month the ocean was covered with dead, cancerous masses—the menace was a thing of the past. Slowly they heaved on the ocean tides, and slowly they sank beneath the waves. The earth was free of its hideous nightmare. The race was saved.

* * *

On a mild October morning a little group filed into the rustic church near the laboratory. A little group—but every broadcast receiver, every television screen was attuned to the waves which were carrying each sound and sight in that church to every corner of the globe. All the people of the earth joined in a prayer for good fortune for the couple whose wedding rites were being celebrated there. And as Mary Cameron became Mary Standish, all the earth joined in the hymn which welled out in a mighty chorus of thanksgiving whose echoing vibrations must have been heard even in far distant Andromeda.

THE END

Too Many Boards

By Harl Vincent

(*Continued from page 77*)

strum agreed to free him from the cell in which he had been placed and to suspend action on the serious charges he faced.

The tiny government ship took off from the plaza, the Mercurians watching stolidly as it was lost in the mists above. But the Rocket III, due to its tremendous exhaust, would have to be towed to an isolated spot outside the city for its take-off. The Dairo appointed a committee to make the necessary arrangements.

"Now," said Chick Davis, when the tow ropes were attached to four huge tractors and his party made ready to enter the vessel, "I have to make my peace with the passengers. Some of 'em were sore as the devil because I woudn't let 'em off the ship. But I guess the excitement of a shipboard wedding'll keep 'em quiet. Let's go."

When they entered the main air lock he whispered to Larry and Art, "Say! Maybe you think there hasn't been hell to pay back home. The world went crazy when the news broadcasts reported us lost. But they're happy again now, and, thanks to Nordstrum in great part, I'm sitting swell with the Board. So everything is O. K."

"That's great, Chick," said Larry, "I was afraid you'd get in a peck of trouble over this. And I don't know how to thank you, as it is."

"Aw, forget it. Art's the baby you have to thank."

"He knows how I feel about him."

Larry grew thoughtful. The girls had hurried to their staterooms to remove the traces of their trying experience. It seemed they were to spend the double honeymoon in the trip to Venus and Mars which must now be continued by the Rocket III. What a difference from the original plans! Then back to the restrictions and regulations—the Boards of this, that and the other thing. But, after all, these could affect them but little now. And they were so used to life on earth. For all its many annoyances, it wasn't so bad. Not so bad. Then there was Art. He'd get somewhere now. He was finally awake—and how!

"Say, Art," he said, struck by a sudden thought, "how in the name of time did you find out that old man Mills had bribed that Board of Eugenics bird?"

Arthur Hovey grinned. "Didn't," he admitted. "Saw the name Phelps on the tag and took a flier on the hunch I had.

"It worked too."

"I'll say it did!" chuckled the captain.

Larry shook his head in growing amazement. "Why, you son-of-a-gun!" he breathed admiringly. "You're good!"

THE END.

Attention!!

In response to the insistent demands for more interplanetary stories, we are making the Fall Edition of the

AMAZING STORIES QUARTERLY

an

Interplanetary Number

Out April 20th. Watch for it on the newsstands

The Laughing Death

By Stephen G. Hale

(*Continued from page* 57)

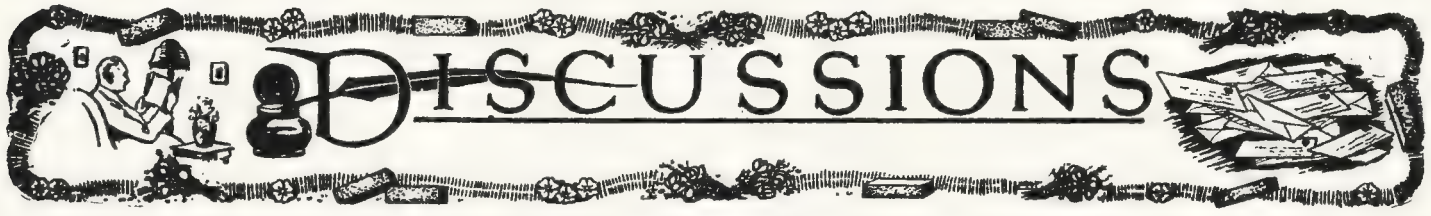
the edge of the cliff a pale sunlight is flooding over a world of fire and smoke and ugly, unseeing monstrosities. Some street lamps, still drawing on the power that has come all these years from one of the imprisoned Metal Worms waver into life again, glowing dimly in all that vast blackness and ruin like toy candles.

The air is rent with the growls, snarls and the night awakening of the animal population roaming at will over the sad remains of the city. The Earth's four-footed creatures alone have escaped the effects of the green vapor. I reach for the rifle that is ever at hand as a low ululation reaches me with bloodcurdling dismalness and I raise my rifle to my shoulder as a wild, unearthly shriek of laughter comes down from the heights and sends a chill up and down my spine. I aim at the hyena which has somehow reached a dizzy perch on one of the tottering skyscrapers and finding itself imprisoned by some chance fall of masonry, is leading a solitary existence devouring the bodies of such hapless victims as had been unable to escape from the building. However, I do not fire for I have wasted my shells before and in vain.

With one last look into the blackness I wonder where the mad fiend, Grubsnig, is and then I look up at the Second Earth with a sad longing look and think of my friend, Joel Murch, as my eyes grow dim with frank tears. Will I ever see him again? Will I ever write a satisfactory conclusion to this very unsatisfactory history?

Time alone can tell!

THE END.



In this department we shall discuss, every month, topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

A VALUABLE LETTER ABOUT THINGS IN GENERAL

Editor, AMAZING STORIES:

I was more than a little interested in the editorial for January, 1931, "The Story of Motors" for the reason that I am an automotive engineer by profession, and your remarks on heat engines are as fundamental as Carnot's cycle. But I have not seen the principles of heat engines enunciated so clearly in any popular magazine until now.

Your remarks about the waste caused by cooling cylinders, while true, may be a trifle misleading. Be assured that this waste is not of the engineers' choice. If they could, they would certainly run their internal combustion engines at temperatures of 1,000—2,000 degrees and even higher. But no lubricant would stand that, nor any metal. If the *chemists,* of whom you are a distinguished member, will give us a metal and a lubricant to stand extreme heat, we engineers will quickly build a motor to squeeze every possible bit of energy out of the fuel. And make you rich, too.

Speaking of the second law of thermodynamics; that is the reason for *high compression* motors—the difference in temperature between the explosion point and exhaust point of the stroke. The compression ratio governs here, not the ratio of bore to stroke, etc. We also save heat by running a motor fast. The heat has less time to escape from the hot gases to the cylinder walls. Instead of passing off, it expends itself in the expansion of the gases.

But I could write a whole book on this subject, and I do not mean to dispute your remarks about rocket motors, the simplest and potentially the most efficient heat engines, the only heat engine that does not lose efficiency at extreme high speeds.

Now I have taken your remarks on my profession with the good nature you intended. May I say a few words about your business, the editing of a magazine? Reading your reactions to readers' letters I think that you must rather feel resentful at critics. This is only human, but I hope you will know that my remarks and suggestions are those of a sincere friend and steady reader of AMAZING STORIES, which I consider to be at least equal to the average of scientifiction. Should you be tolerant enough to print my suggestions I'll be greatly interested in whatever you might wish to add, and I'll see it, because no matter where I am sent by the company, I can always buy AMAZING STORIES, even in small towns.

"Via the Time Accelerator," by Frank Bridge. The best story in the January number. I can find no fault with the science of this story, unless you get right down to narrow facts which would disqualify about 95 per cent of all scientifiction. Because Bridge looks to me like a "comer," let me commend to him that he study the more finished style of the professional writers who write for other magazines. "Via the Time Accelerator" was about 50% spoiled by the slow and amateurish start. The first page is nothing but pointless conversation, irritating to the busy reader. Page two is a mess of cockeyed mathematics about the theory of time travel, that does not convince and does not explain how Brockhurst is going to put it to work, except something vague about the vibration of particles. As vibration itself must be expressed in terms of time, so many oscillations per second, the whole thing makes nothing but nonsense. It is pseudoscientific gibberish. Also, contrary to known fact. Matter, except at absolute zero, is known to vibrate. Changing the rate of vibration simply changes the etheric radiation of that body, whether that radiation be merely heat, or in the case of extremely rapid vibrations, light. So the time machine, as described, would merely have "het up" its inventor and his plane, the same as if he sat on a hot stove. All right, you use up two and a half pages getting started, and the story gets down to business about the middle of page 915. From then it is *good,* with some new ideas in it. Now if the author had started like, say, R. F. Starzl in "The Globoid Terror" in a recent number, with a tense situation right at the start, and followed it up with fast action right along, he would have had a story as good as "The Globoid Terror," which is quite a recommendation. I agree with the reader from Oklahoma who says Starzl always presents real science. Every astronomer will tell you that conditions on Venus' north pole are probably just as described in "The Globoid Terror." Mining there would have to be done just as described. Yet most writers make Venus a good deal like the Earth.

"The Prince of Space," by Jack Williamson. Well thought out and original, though a little hard to get started. The rocket torpedoes are something new in weapons after so many tiresome rays. But the love stuff between Paula and the Prince was unnecessary. In such a story as this, it will make a lot of readers say, "No Love Stuff!" when really they have no objection to real love interest, if it has something to do with the story. But it could have been left out of this story without hurting it in the least.

"The Black Hand," by Charles Gardner Bowers. If it was possible to graft a black arm on a white man, why wasn't it possible to graft a white skin on the black arm?

"Tanks Under the Sea," Harl Vincent. Pardon me, but it was punk.

"The Act of Retipuj," by Samuel Garfinkel. Well, it was somewhat better.

"The Drums of Tapajos," by Capt. S. P. Meek. What I read of it was pretty good, but I never follow continued stories.

Looking this over, it looks pretty severe to me, and in extenuation let me point out that I still think A. S. is good enough to spend my quarter for every month. While this will probably irritate you, before you throw it into the wastebasket think it over anyway. There may be other readers who think the same as I.

Favorite authors: Dr. M. J. Breuer, Ralph Milne Farley, Murray Leinster, R. L. Starzl, A. Merritt, Geo. McLociard, Bob Olson, H. G. Wells. Print a number with one each of these authors and you can sell it for a dollar, easily.

I. L. Ingrahim,
9941 Jerusalem Ave.,
Hempstead, L. I.

(You cannot imagine that what we've said about the waste in cooling the cylinders of an internal combustion engine, was intended as a criticism. It merely pointed a defect in the internal combustion engine, which it seems it is impossible to get away from. Wouldn't it be curious if some Watt of the gas engine could do for it some of the service that was done by the original Watt for the old-time steam engine? Your description of how high speed operates to increase efficiency, was extremely interesting. Our trouble about rocket motors is that so many people think that the resistance of the air to the escaping gas has to do with the operation. And now we wish to emphasize the fact that we are not resentful to criticism. Of course, we are only human, but we are of a high enough type of humanity to accept varied criticism, so you must not be afraid of offending us. Keep on criticising and your letters will be quite welcome. You see that in the heading we have called it a valuable letter. We hope Mr. Bridge will take your very severe criticism in a good natured way. Harl Vincent, of whom you speak so unfavorably, is a professional engineer, holding an important position with one of the great electric companies. There is comfort, however, in your last paragraph where you name your favorite authors. We are sure we could add to the number many others and you would agree with our selection.—EDITOR.)

A CORRESPONDENT WHOSE IDEALS WE SEEM NOT TO ATTAIN TO

Editor, AMAZING STORIES:

I have a most unpleasant task before me, a task that I relish, only in the fact that it affords me an opportunity to voice a criticism and to give you my opinion as to the publication.

I have been a reader of AMAZING STORIES for the past two years, and have found it, until quite recently, a leader in its field, but lately this same opinion has taken a rather severe drop, due primarily to two things.

One—the eternal question; the cover is the most fantastic thing ever seen. Although I realize this feature has great selling properties, it tends to create an impression upon outside minds as something akin to trash. I've interpreted this look upon the faces of many who look my way when I have the magazine. I ask you, in the name of common sense to tone this feature down a bit, and not try to print the whole book on the cover.

Two—regarding the stories; some are positively absurd. I'll admit some are good, but authors in their search for originality create rank impossibilities.

I believe, when you first published this magazine, you had an ideal, the ideal to bring science to the masses, not as something almighty, nor God-like, but as something symbolizing knowledge and truth. The authors make folly of the word truth. Pure science stands as a tribute to the intellectualism of man and should not be dealt with lightly, and the authors should hold this science down to logical common sense.

If this letter should ever creep into print, I'm afraid most of your recruits, who hold AMAZING STORIES as a guiding light, will resent such severe criticism and perhaps a good deal of verbal abuse will be directed my way.

I do like your editorials; they are both instructive and inspiring.

In conclusion, I will say with all my heart, that I would like to see AMAZING STORIES raised to a height, where it will not be known as trash, but will be praised, and read, and looked up to by those who now condemn it.

Bertram Schumpf,
94 Jamaica Avenue,
Brooklyn, N. Y.

(Our covers always show one incident in one story and there is no attempt to print the whole book on the cover. The question of color, drawing, and general lay-out is taken into consideration. Whatever our ideal was when the magazine was started, is expressed on the front page always. We quote: "Extravagant Fiction Today—Cold Fact Tomorrow," so you will realize that our authors should not be too matter-of-fact but should give vent to their imagination and some of them may have in them a suggestion of Jules Verne, who foretold what is happening today, but which in his era was considered impossible. The late Simon Newcomb, the leading astronomer of America, said the airplane was an absolute impossibility. Leslie, the State Geologist of Pennsylvania, years ago predicted the end of the great evolution of petroleum and natural gas from the earth and years after that assertion and when Leslie is long dead, we read of the Oklahoma

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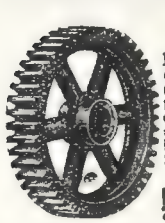

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SOME DIFFICULTIES WITH "VIA THE TIME ACCELERATOR." MORE OF DR. SMITH'S STORIES WANTED

Editor, AMAZING STORIES:

I want to congratulate Dr. Smith on his stories "Skylark of Space" and "Skylark Three." These two stories are the best I have ever read and that is saying a lot. Please have Dr. Smith write some more "Skylark" serials.

Also, I would like to have a reprint now and then, for instance, "The Conquest of Mars." Interplanetary stories are my meat and please don't fail now.

In your January issue, in "Via the Time Accelerator," I don't quite get the idea of Brockhurst seeing himself coming down to land as he is just starting and seeing himself starting out as he is coming down. Also about the time when Brockhurst was in the museum, he saw his own plane and Time Machine. The part I don't get is how the *same* airplane could be in two places at the *same* time.

Vincent De Nardo,
Buchanan, Michigan

(Dr. Smith is a comparatively new author who certainly has made a wonderful hit with the "Skylark" stories. As far as Mr. Brockhurst and his plane and Time Machine are concerned, it seems obvious that almost anything could happen if we could accelerate and retard time, if we can go into the future and travel in the past. He also is writing about impossibilities and we must expect to meet some contradictions of our present ideas.—EDITORS.)

PLEASANT TRIPS IN INTERPLANETARY TRAVEL DESIRED. A TRIBUTE TO DR. BREUER FOR HIS LETTER IN THE JANUARY ISSUE

Editor, AMAZING STORIES:

I have read Dr. Breuer's letter in the Discussions Department of the January issue of AMAZING STORIES, and I want to compliment him on his frankness in showing what he thinks of some of the wild and inhuman tales which have appeared in AMAZING STORIES.

And I say, by all means give us interplanetary stories, that we may leave this dull, suspicious, money-mad, and unimaginative world on the wings of imagination.

But we all desire a pleasant trip. Why do the authors insist that we must continue to witness carnage and conquest? Plenty of that here on Baby Earth.

Such stories keep alive the war spirit of conquest. True, they contain plenty of action and therefore are interesting, but they do not give the reader the satisfaction of constructive conquest, which he craves.

I believe the majority of the readers of AMAZING STORIES prefer stories in which their Ideal is realized without causing wholesale bloodshed.

AMAZING STORIES has never caused me to regret the purchase price, for I consider even one good story of scientifiction well worth 25c. I am one of your readers who always turn to the Discussions Department first.

Al Hansen,
721 Main Street,
Hayward, California

(We are more than pleased to read that you turn to the Discussions Department first. It always seems that it is a good start-off for anyone who is taking up AMAZING STORIES, to see what other readers have to say about preceding issues. We are going to give interplanetary stories and we have in mind the issuing of one Quarterly issue entirely devoted to them. Personally we take the greatest interest in what our readers have to say, and we put in the scolding letters which are not very numerous, along with the complimentary ones. Dr. Breuer is a highly valued author.—EDITOR.)

A GRADING OF STORIES IN THE JANUARY ISSUE. THE RELATIVE MERIT OF ARTISTS

Editor, AMAZING STORIES:

One day last year, I told Dad I wanted a magazine. A cover, a brightly colored cover, caught my eye. I picked it up and leafed through it. At a glance I knew it was the one I wanted. I got it and read it through, and it was all I could do to wait until the next issue was out. The magazine was AMAZING STORIES. I have read some other science fiction magazines, but none satisfies me more than AMAZING STORIES. I have shown it to some friends and now they are buying it.

Now, to get down to facts. I write here to criticize your (our) magazine just as others do. The cover could not be better. It is perfectly colored and the pictures are usually taken from one of the best stories. Morey is an excellent artist and he makes the best cover of all. Paul and Wesso are good artists, but I think Morey is the best.

Everybody tells their favorite authors, stories, etc., so I think I'll follow suit. It seems that Jack Williamson is growing to be a great favorite among other readers, and likewise a great favorite to me.

"The Drums of Tapajos" is excellent. I have just finished the January number and the story ends there. I almost hated for it to stop. Capt. S. P. Meek is getting better and better each story that he writes. As for the best stories in the January issue, I classify them as follows:

1—"Drums of Tapajos"—Excellent. 2—"The Prince of Space"—Extra Good. 3—"Via the Time Accelerator"—Extra Good. 4—"Tanks Under the Sea"—Good. 5—"The Act of Retipuj"—Fair. 6—"The Black Hand"—Fair.

The stories for the next issue look as if they were going to be good. Everybody seems to talk about reprints. I think it is a good idea myself, but I would not publish them in AMAZING STORIES. Why not have a special magazine for reprints only?

I would like to give you a few points concerning the make-up of A. S. One good way to *ruin* it, is to make the magazine smaller. I did not know whether you had thought of it or not, but *please* don't make it smaller. The paper is fine, better than a glossy paper would be. Everything is running fine, but, grab an interplanetary monthly, before some other company does.

You will probably want to know who the man who wrote this is. My name is Lewis F. Torrance, I am 14 years old and a freshman in High School. I have a small telescope of my own, and I buy several other magazines, including SCIENCE & INVENTION.

Lewis F. Torrance,
502 East 10th Street,
Winfield, Kansas

(We have not the least idea of making AMAZING STORIES a smaller magazine. It has a sort of standard size and we certainly cannot but adhere to your suggestion. The Winter Quarterly will be out when you read this, but your criticisms develop into plain compliments which we certainly appreciate warmly.—EDITOR.)

A DELIGHTFUL LETTER FROM A CO-ED IN LOUISIANA

Editor, AMAZING STORIES:

We like your magazine down here in Louisiana. We have read it for a number of years and we intend to continue. We feel that AMAZING STORIES serves a definite need in literature that other magazines cannot supply. Fact is, we know one co-ed who passed up a sorority-tea to look over a copy. The new grade of paper is great. Just a bit of constructive criticism. We enjoyed "Drums of Tapajos," by S. P. Meek, but when he didn't tell us what finally happened at Troyana, we felt we had missed something. We want a sequel to "Drums of Tapajos." Please, please persuade Capt. Meek to give us one. We wish you luck and thank you for many hours of excellent entertainment.

Virginia Owen and others,
Louisiana State University,
Baton Rouge, Louisiana

(We agree that lots of things might have happened in the city of Troyana. It was quite delightful to get a letter from that very interesting type of humanity embodied in a co-ed and on account of the multiple nature of the signature, we can enjoy the idea that a lot of the young sisterhood are complimenting us.—EDITOR.)

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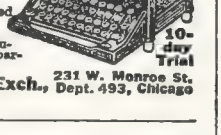

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NOTES ON THE JANUARY AND FEBRUARY ISSUES OF AMAZING STORIES

Editor, AMAZING STORIES:

Just finished the February, 1931, issue of AMAZING STORIES. I can hardly wait for the second part of "Television Hill." It's the kind of a story I enjoy, and I surely hope that in the second part King and Wentworth don't destroy their invention. If they are afraid to give it to the world, they can wait, can't they? But if they wait, someone else will invent a similar machine! What a predicament!

"The Man Who Annexed the Moon" was a fine story also, and it contained a lot of fine science. I think that the fellow who fell in the deep lunar pit was rather reckless, though. If that glass bulb had broken, he'd have been in a fix.

"The Purple Plague" was pretty good, but I hate to have romance in scientific fiction. The same goes for "Television Hill." "The Bees of Borneo" was pretty good also. In short, the whole magazine for February was good.

In the January issue, "The Prince of Space" ranked first, but it contained romance. Though time stories make excellent scientifiction, they are impossible. Anyone with common sense can see that. This, of course, applies to "Via the Time Accelerator."

Of course, I realize the Zeiss planetarium in the Adler Planetorium is more or less of a time machine, but even then a new comet may present itself, two stars may collide, or any number of things may happen that cannot be shown by the machine.

"Tanks Under the Sea" is good. Too bad the world is so skeptical. Look at all the credit those Yankees lost!

"The Black Hand" was good. Such operations will no doubt be possible in the near future. Even in this unenlightened era, stomachs have been removed, the oesophagus being joined to the intestines.

Recently I got hold of a lot of old AMAZING STORIES. It is interesting to note what inventions have verified some of your authors' prophesies. The Lie Detector, for instance, spoken of in "The Seventh Generation." Such a machine was actually perfected by some professors in the University of Chicago.

That is all, except that you might ask your artists to follow the descriptions given by authors more closely.

Charles W. Norris,
7040 Parnell Avenue,
Chicago, Illinois

(We agree with you that some of our stories may rank as depicting the impossible, but look at the next to the last paragraph of your letter, where you say "It is interesting to note what inventions have verified some of your authors' prophesies." As far as romance is concerned, it is a very real thing in this world of ours and it often seems that the world would be a very dull place without it. But, of course, it must always remain an incidental feature in A. S.—EDITOR.)

BACK NUMBERS OF AMAZING STORIES QUARTERLY WANTED

Editor, AMAZING STORIES:

In writing this letter I hope that you can put it in the Discussions Department, where it will be observed by a reader of AMAZING STORIES.

I have read AMAZING STORIES and AMAZING STORIES QUARTERLY ever since it came on the stands. It has been just like a friend indeed for me.

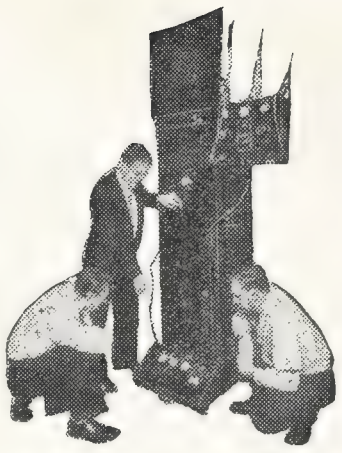
In my two previous letters, you refused to answer me—"Why?" Yesterday I telephoned you and asked if you had any AMAZING STORIES QUARTERLIES in stock, the answer was "no."

Now, if you will be so kind as to print this letter in the Discussions Department, I'll be always grateful to you.

I want to secure Vol. 1 of AMAZING STORIES QUARTERLY and Vols. 1 and 2 of AMAZING STORIES Monthly. If any of my fellow readers have them or part of them, please get in touch with me.

Michael Cangelosi,
7 Prince Street,
New York City, N. Y.

(We are glad to publish your letter and hope that you will succeed in your quest. We are completely out of AMAZING STORIES QUARTERLY back numbers except of course the very recent ones and we will be very glad to get them for our own files.—EDITOR.)



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A "PAT ON THE BACK WITH A STING TO IT"

Editor, AMAZING STORIES:

I have been a reader of your fascinating magazine since its inception and wish now to give you a "pat on the back" with a sting in it.

I enjoyed every word of "Drums of Tapajos" and only hope that Capt. Meek will see fit that he give us a sequel wherein Troyana is saved, and they give the world some of the advanced principles, really age-old, employed there, and of course, let the boys win their respective maids.

I like the new paper upon which you print, but do not like the greater part of your cover illustrations. The fantastic depictions often let me in for a lot of more or *less* good-natured kidding from would-be friends. Moderation would seem a good policy as concerning covers. Wasn't the "Prince of Space" just a bit severe and impractical in the destruction of the planet Mars? Show me any forces that—gain as they expend, more likely that power diminishes as it is spent. Now what will Burroughs do with his famous character, John Carter "War Lord of Mars." Please let us not destroy any more of the planets. What would happen to the remainder of our constellation, were one destroyed? Does not Science demonstrate the speed of Electricity as that of light? Then, if the Martians bombarded the Prince with electrical rays, would not the force strike as it was seen? If we must have absolute impossibilities, let them be reasoned in logical fashion as was done in "Skylark Three," one of the best, if not the best scientifiction story ever written.

O. E. Mumford,
Albuquerque, New Mexico

(We are sure that Capt. Meek who has written many stories for us will be delighted when he reads what you say about his last story. Our cover page illustrations are drawn from passages in one or the other of the stories. The artist simply endeavors to express the author's idea. Also, we want to attract newsstand readers, who have never peered inside our pages. You object to having the planets destroyed. We are shortly going to have a story about a catastrophe affecting the earth. Dr. Smith will be delighted when he reads your opinion of the "Skylark" stories. He is distinctively one of our staff authors and we hope to have him with us for many months.—EDITOR.)

A CHALLENGE TO PRINT IS BEST MET BY PRINTING THE COMMUNICATION

Editor, AMAZING STORIES:

No doubt you will receive a great many letters praising your use of smooth paper in the February issue of AMAZING STORIES. I admit that it makes a vast improvement in the appearance of the magazine. But the stories in that number are as bad as ever. In fact, your general run of fiction seems to be getting worse with every issue.

Adoption of smooth paper doesn't mean anything. It isn't physical appearance of a magazine that counts, but the quality of the stuff it contains.

The subtitle of AMAZING STORIES is "Scientific *Fiction.*" That's an egregious misnomer. Your stories are little more than scientific treatises in narrative form. They lack action, adventure, romance. Gripping suspense and human interest are utterly foreign to them. With few exceptions, they are tedious, insipid, lifeless. Their dullness and vapidity are the more marked when compared with the sparkling, vivid stories printed by a contemporary science-fiction magazine. And this latter periodical was established a little over a year ago!

A few of your regular authors—Meek, Vincent, Starzl—have the knack of writing sprightly, realistic stories that hold one's interest. Your other contributors are duds. Their abstruse scientific ramblings do not constitute readable fiction.

I challenge you to print this letter, and allow your readers to comment freely upon it. I'll wager they agree with me.

George K. Addison,
94 Brandt Place, Bronx, N. Y.

(You need not challenge us to print your letter, especially because you are willing to give your address. When we get such severe comments and criticisms, from the writers who do not give their address and sometimes even signed by initials, we feel not the least inclination to publish what they have written. If you will look at some of our other letters from correspondents, you will find that many of them consider that our magazine is improving and getting better and better. The editors are certainly working very hard at it and using every effort to give good stories. We could

name many other authors than the three whom you honor with your commendation who are equally good. Mr. Verrill, who has written a great deal for us, has been in the past a very voluminous writer and his books have had a wide acceptance by the public. Dr. Keller and Dr. Breuer, we put in the first rank of writers of stories, of the type which we need. Dr. Smith, the author of the "Skylark" stories, has received praises from our readers enough to turn anybody's head. Mr. John W. Campbell, Jr., a student in science, has been so much praised that we felt anxious about him also. At any rate, we hope a great many of our readers will answer your challenge to them. We want to know what they really think of A. S. —EDITOR.)

AN ARTIST CRITICISED, WITH A COMPARISON

Editor, AMAZING STORIES:

I wish your artist Wesso would pay more attention to the incident he illustrates before he draws the picture. On the cover of the August issue the Skylark is shown cutting the Fenechrone ship in two with the zone of force. The ship is shown cut squarely. On page 404 it said each piece was sharply cut as though sheared from its neighbor by some gigantic, curved blade. The illustration at the beginning of the story shows them teaching Shiro English with a mechanical educator. At the same time the visiplate shows the Fenechrone ship attacking them before their instruments detect it. If the visiplate is like a window, it could not show the Skylark as though it was in another ship. I hope these criticisms don't discourage Wesso; just tell him to read the story more carefully and get the details right. Next to Paul, Wesso is the best science fiction artist I know of. That kind of illustrating is no easy job.

If the rest of the story is as good as the first installment, "Skylark Three" will rank as the best story I ever read. "The Skylark of Space" will take second place.

Edgar Hurd,
General Delivery,
Crescent City, Calif.

(A scimitar has a curved blade but will make a perfectly straight cut, and this is only one instance among many of the application of a curved blade. We place Wesso in the front rank of our artists, and we are glad that in spite of your criticism you do realize his ability. In the Skylark stories the author seems to have hit the popular taste very accurately. That of course is something that we all desire. Sometimes it seems to us that Dr. Smith is almost astonished at his own success. An author can never judge with any degree of accuracy as to the merit of what he has written. It is the criticism of strangers that tell the story, and the "Skylark" set has won great enconiums.—EDITOR.)

AN APPRECIATION WITH CONSTRUCTIVE CRITICISM

Editor, AMAZING STORIES:

I received my February copy of AMAZING STORIES today. I sure was glad to see the new paper that you are using. It's great. You have never had a better looking issue than this one. About a year ago you began improving the appearance of the magazine, and I think now that it has reached the peak of perfection. All except your illustrations. What happened to Paul? He is the best artist you ever had and I believe ever will have. To be sure, you had one or two small illustrations by him in the past months, but I see none by him in this otherwise perfect February issue. Paul is especially good on the covers. Ask any of the old time readers who have been with AMAZING STORIES since the days of '26. Morey's covers are not bad, but they are too plain and lack the finish that Paul's have. And Paul can blend color. Morey can't compare with him. The nearest one you have to Paul is Wesso, and we get very little from him.

And now for the stories. Jack Williamson's "The Green Girl" was the best story of the year. Next came "Skylark Three" and "The Drums of Tapajos" in a tie for second. The best novelette was the "Prince of Space"; another by Williamson. The stories have improved by leaps and bounds throughout the past year. It remained for the Quarterly, however, to supply the real kick of the year. I refer to those great novels, "Paradise and Iron," by Dr. Breuer, and "A Modern Prometheus" by Cyril G. Wates. They were great. In the fall Quarterly it states that Wesso illustrated the story "The Black Star Passes." It was done by Paul, and darn well too. This criticism is written with the idea of construction and not to knock the magazine.

In closing, I would like to say that I have long admired your policy in running the magazine. You are not continually bragging about the contents of the magazine and of its make-up. Neither do you say that you are going to make such and such improvement, and give us a lot of "sales" talk. You just make the improvement. You do not cast slurs at other magazines. All of these are in your favor and are something to be proud of.

One thing more, DO NOT change the size or make-up of the magazine.

R. Carlisle Mainfort,
c/o Mr. C. Budwesky,
Braddock Heights,
Alexandria, Virginia

(We are certainly glad to have your comment on the February issue. We are trying, in our humble way, to get out as good a magazine as we can possibly produce. We are by no means through trying yet. You will see more of Paul's work in AMAZING STORIES. We are sorry about the error in giving credit to Wesso for the illustrations of "The Black Star Passes," which were done by Paul. What especially pleases us about such letters as yours is the loyalty expressed in it for "our" magazine. We want all our readers to feel themselves part of the family.—EDITOR.)

A CONSTANT READER FINDS SOME ERRORS IN AMAZING STORIES BUT READS IT ASSIDUOUSLY

Editor, AMAZING STORIES:

Have read every issue of AMAZING STORIES since I was 29 (in March, 1927)—started saving all copies in November, 1927, but unavoidably lost some of them. Do you have any reserve copies of the 1927-28-29 volumes? If so, what will the issues cost each?

I have a suggestion for your Discussions Column. In that there are so many adverse comments and letters of criticism *re* interplanetary and forces—how about requesting your authors to keep strictly to facts and theories as generally accepted—when these facts can be cleared up by readers? Let them (the authors) use "poetic license" only when the readers cannot check up on their logic. For instance, you had a story where the interplanetary ship was heading for a spot some certain distance ahead—I think it was 500,000,000,000 (trillions) miles away. The ship's maximum speed was 186,000 miles per second. Yet the author figured the minimum time it could be traveled at maximum speed was 500 years. Don't you see the point? I forget the name of the story.

The speed of a vessel or other object traveling 186,000 miles per second would be 5,865,796,000,000 miles per year—therefore the interplanetary ship could have covered 500 some odd trillion miles in less than 100 years—whereas the author said 500 years—only 400 years more—or 5 times his actual time spent. Incidentally—the lady historian was 160 some odd years old on arrival—she wasn't near 30 when they started. Even making allowance for acceleration-time the measures the author gave one against the other didn't check.

Now here is a compliment. Other publications are paying AMAZING STORIES the sincerest compliment possible by imitating your (our) magazine. As I am scientifically inclined I buy this magazine, too, as the only trouble with your magazine is that every issue has not only a beginning but an ending—and last me only 30 minutes. The Quarterly lasts about 45 minutes. However I find both copies (A. S. and A. S. Q.) and have reread most of the copies 12 to 20 times.

Oh yes, by the way—Wesso in AMAZING STORIES, January, 1930, picture of 4th dimension space penetrator (a good story—incidentally) page 958—shows the door to the machine opens on bent hinges, an impossibility. Moreover the door is hinged upon its inner edge—yet is hinged to the outer edge of the door opening. Also a bad error in mechanics as the door would not close even if the hinge were in a straight line—at least not tight.

W. J. Morrow,
115 Washington Ave.,
Macon, Ga.

(We have a few back issues of the magazine but not very many. Various readers have written to us stating that they have numbers of former issues for sale, and you will find their names in the Discussions Columns. There are several readers who make a specialty of back numbers of all magazines. You might also address our subscription department in this office. Don't you think that

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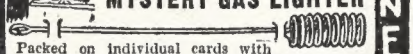

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you are too fast a reader? Mr. Wesso can save his face as they say by saying that the door you refer to and its long hinge pin was so thin and elastic that they could open and shut it, although of the construction he has shown. But this we admit would be decidedly begging the question. We will leave the answer to the rest of your letter to the author of the story, whose mathematics you criticize.—EDITOR.)

A MEDAL-WINNING LETTER FROM THE COAST. (WEST NOT EAST.) A MOST AMUSING TRIBUTE TO SOME OF OUR AUTHORS

Editor, AMAZING STORIES:

Feeling that my four years, ten months perusal of "our own" magazine in some way qualifies me to criticize, please accept the following as "another reader heard from." Line up the staff, Mr. Editor; they all have their share and any with guilty consciences may hand in their resignations —after I am through. To proceed:

First for the authors: Mr. Repp, turn around and bend over. There! That hurt me more than you, Mr. Repp, but you had it coming. What do you mean by making spineless cowards and I'd hate to say what else out of all your humans and vindictive, superior personages of our visitors from other planets? Why does the Earthman always come out at the short end? No reply, sir. The Human Race is a noble, courageous, all-conquering aggregation of Men. If they have any weaknesses you should be ashamed to parade them in print. Look at Dr. Smith, on your right. There is a man to emulate. Dr. Smith, I congratulate you. Let me pin a medal on your chest, if I can find room. But don't feel swell-headed, Dr. Smith; there is a young man beside you who seems a trifle jealous. Quite green-eyed, in fact. Mr. Campbell, I believe? You envy Dr. Smith's medal? Never mind; here's one for you, too, for your work on "The Metal Horde" and "When the Atoms Failed." You boys should get along better together. Space is plenty large enough for both of you. I admit Dr. Smith's characters have conquered and made friends with more planets than yours, Mr. Campbell, but be resigned Mr. Campbell, be resigned. I would suggest that you get together and parcel off the universe. What say you take the Southern Hemisphere and leave the Northern to Dr. Smith? Well, I'll let you decide. Being in the advanced class, you two may settle the question between you, but, before I pass on, let me warn you against subs from below. You know there are other authors who would if they could and may yet learn how. How would you like to make it a triangle? Get busy then and quit bickering. Well, well, who is this, mournfully bent with elevated coat-tails and freely falling tears? Why, it's Edmond Hamilton. Cheer up, Mr. Hamilton. I know some pretty mean things have been said about you, but I'm all for you. Let me shake your hand. I've wanted to ever since I accompanied Marlin, Whitely, Randall, and Hunt through the meteoric swarms to save the world. I never lost faith in you, Mr. Hamilton, even when the ugly yellow disc—yellow is my unfavorite color—of Saturn was rushing up at me and the gang was outside sweating away in diving suits, I never turned a hair. I knew you were looking after us, Mr. Hamilton. I nearly fell out of bed—it was the humidity, not excitement—but we got through and saved the earth. Goodbye. Hope I see your name again soon.

Gosh, Mr. Editor. I've only got five minutes. I can't take care of this army of authors. Here's a handful of medals. Pin 'em on yourself if you can't find any deserving authors. Your classy editorials deserve at least one medal. Be sure and put one on Wesso and here's a brick for Morey. Tell him to fire it at Dr. Keller if he has no use for it. What shall we do with Harl Vincent, readers? The medals have it. Tell that office boy to be more gentle when he throws me at the waste basket. Last time you would have thought he was Bobby Jones; two strokes behind on the last hole. Clear across the office and it was your umbrella, too. As my parting shot you can settle the rocket question by firing one off in L. Taylor Hansen's head. It should break a speed record for acceleration. Also, I'd like to take this opportunity to admonish the fellow with the sensitive mind who wrote in about "The Ice Man" that he should stick by the author's words when he reads a story.

Thank you, Mr. Editor, I'm through. It's your turn.

Parker Snapp,
979 Patterson St.,
Eugene, Oregon

(You certainly have earned the right to criticise our humble efforts. Your letter is most amusing. The writer of the letter seems to be one who lives in the stories that he reads, which certainly is the way to enjoy them. We are glad to see your last little brickbat which you throw at the "fellow with a sensitive mind" who took such absurd exception to "The Ice Man." And now we would like to put up a puzzle for our readers. Is Mr. Snapp's letter a collection of brickbats or not? We find it rather hard to decide.—EDITOR.)

SOME WORDS FROM MR. CAMPBELL'S PRINCIPAL CRITIC. AN INTERESTING COMMUNICATION FROM DR. EDWARD E. SMITH

Editor, AMAZING STORIES:

Mr. Campbell is indeed a "sprightly and courteous gentleman," again to quote my friend Sir Nigel. A couple of his blows landed right heavily; one in particular denting the old armor grievously and, methinks, cracking a rib or two. However, he is still technically unhorsed in the main bout—his major thesis of the dud star.

Reiteration is neither proof nor argument, and he is still sticking to the curved-space-time theory, worshiping it as the one undoubted and unquestionable fact. It is not his deductions from that theory that I have questioned, but the theory itself. As a theory—and a most tenuous, abstruse, and highly extrapolated theory at that—I declare it to be my privilege to violate it in any way I please in my fiction, even though I may believe in it myself as firmly as does my opponent. Also, I declare that before Mr. Campbell, as a scientist, can make such positive statements so unequivocally concerning "possible" and "impossible" things, he must be absolutely and mathematically certain of the basic fundamental assumptions upon which his conclusions rest. And concerning the dud star his basic assumptions are utterly incapable of proof—they are *theories;* really only *hypotheses,* and far from being *facts.* Therefore, unless he can prove otherwise—something neither Einstein, Jeans, Eddington, nor Millikan has ever attempted to do—I must regretfully insist that Sir Campbell shall close his pan and let me violate his pet theory as much as I please!

However, I do not want this Campbell-Smith thing to degenerate into a polemical, running on as they do, forever, like Tennyson's "Brook." My main purpose in writing this "Discussion" is to clear up a couple of very serious misconceptions I have noted in the February number.

Myron A. Elliott: The zone of force did not destroy matter; it simply set up a spherical surface of stasis in the ether, through which neither matter nor ordinary vibrations could pass. Thus it acted as a pure shear of infinite power, but could not have any such effect upon air as you have supposed. I could not go very deeply into theory in the story—in fact, according to some, I went in too deep as it was—but I have something like four hundred pages of notes, from which I will be glad to quote you in personal correspondence, if this brief explanation is not clear.

Bill Blanton and Marshall Smith: Shame on you for not reading stories more carefully! The first illustration of "Skylark Three" was one of the best pieces of work I have ever seen, and described the occurrence perfectly. The picture of the Fenachrone vessel shown upon the visiplate was not taken from the actual vessel, which had been destroyed previously as you say, but was taken from the brain of the captive. This point was brought out quite definitely, I thought.

Thanks, all of you "Discussers," for the wonderful reception you have given the "Skylarks" —so much more than I expected, or, to be brutally frank, deserved. I did end the "Skylark" stories definitely, purposely; so that you would all know that they were *done.*. In fact, I did not expect to hear a single request for more. However, there have been some such requests, and if there are enough more, I will try again. There are several ways of getting away from that epilogue; and I think that any writer can do his best work upon stuff that he knows somebody will like. It puts bubbles in his think-tank.

Edward E. Smith, Ph.D.,
33 Rippon Ave.,
Hillsdale, Mich.

(We have come to the conclusion that Dr. Smith's letters, anent the subject of writing for publication, are equal in value to his highly esteemed fiction. We are not going to make any lengthy comment on Dr. Smith's letter. It is so amusing and so much to the point, that as far as we can see, it takes very good care of itself. On behalf of our artistic staff we certainly thank you for what you've said, for we have the weakness to be rather proud of the members of that department. We are sure that our readers will be quite excited over your (almost) promise to give them more "Skylark" stories.—EDITOR.)

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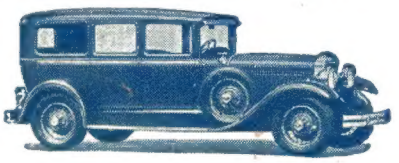

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